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THE *JOURNAL OF PERIODONTOLOGY* is published to serve as the professional journal of periodontia; to keep dentists in touch with research being carried on in this field and related sciences; to stimulate greater interest in the supporting tissues of the teeth and their relation to oral and general health. The plan to continue the publication of abstracts indefinitely will make the Journal a fund of extensive information, readily available to students, teachers, researchers, and clinicians.

The Journal is the official organ of the American Academy of Periodontology and will contain therefore those papers of scientific and clinical interest which are presented at the annual meetings of that society. The transactions of the 1939 annual meeting are published in this issue. This number concludes the abstracts of important articles on periodontia that appeared during the year of 1938.

We are grateful to all who have made available the subject matter from which the abstracts and copies of abstracts have been made, including the authors of the original articles, the journals mentioned in the text of the abstract section, and those who have aided in any way in compiling the material presented in this issue.

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To the Pioneers of Dentistry

And thus we see upon the stage of life,
Where hopes, and fears, and dreads, and dreams are rife,
The days of old when men both true and tried
Foregathered and sought counsel side by side;
Today we pause, and halt and bow the head
In reverence for our past and peerless dead.

Ambition seldom soiled their sacred flame,
They labored for the cause and not for fame,
They labored for the love of truth and fact,
A high resolve illumined every act;
They strove to reach the heights as best they might,
And cared for naught except to see the light.

'Twas not for glory, not for greed or pelf,
'Twas not for vulgar show and not for self;
'Twas only that they might the better know
The mysteries that hedge us here below;
That they might read the stars of dental thought,
That they might prove their knowledge, dearly bought;
That others might from them the story learn,
To satisfy the hearts that pant and yearn.

Their motives thus were far beyond reproach,
Their ideals such that we may well approach
With heads uncovered as they pass us by,
In pageant or in memory's loving eye.
Their technique was with grace and skill imbued;
Compared with ours their instruments were crude,
And yet their splendid precepts blossomed forth
In beacon light of high resolve and worth.

And what is finer in the age-old plan
Of helping serve your suffering fellowman,
Than lofty purpose backed by ardent love,
The glow that shines like radiance from above?
And what can man bequeath his fellowmen,
In legacy of word or stroke of pen,
Of greater worth than principles of right,
To soothe his soul and help him in his plight?

And thus tonight we bow in homage deep,
To rest the souls of pioneers who sleep;
And yet the while we worship at their shrine,
We turn another leaf—to thine and mine;
And bravely smiling through a tender tear
We see a newer dawn of hope and cheer.

And onward, onward, up and up we go,
With vision high and sacrificial glow,
They showed the way, *we* strive to carry on,
Till pain, disease, and fear and dread are gone.
Their mission was to start a lambent ray,
Ours to make it shine as bright as day.

—*Dr. C. N. Johnson*

Epilogue—from A. D. A. Historical Pageant—*ONWARD*

THE JOURNAL OF PERIODONTOLOGY

JANUARY, NINETEEN HUNDRED FORTY

Periodontic Problems in the Child Patient*

By JOHN C. BRAUER, D. D. S., M. SC., F. A. C. D.
Iowa City, Iowa

THE SCIENCE of periodontology has in the past been directed mainly to the adult and young adult, however, this latent perspective has been materially changed in the last ten years to include the young child. There are too many in the general practice of dentistry today who do not realize the problems confronting them in the child's mouth. Every dentist should be familiar with the normal oral structures and be able to recognize any deviation from them.

Dentistry has one major objective which is of paramount importance in any of its branches and at all ages, namely: to maintain function. Efficiency in mastication is no doubt the goal in periodontics, prosthodontics, orthodontics, and pedodontics. Through these several branches representing dentistry we are trying to maintain sound foundations and structures for chewing.

In early childhood as throughout life one of the important considerations in the daily routine is nutrition. The fact that dentistry is dealing with vital cellular structures wherein metabolism takes place from day to day and in which deficiencies will be evident if the proper elements and foods are not supplied, warrants a sincere evaluation of the principles of nutrition. It is not essential that dentists be familiar with all of the details concerning metabolism nor with the specific treatment of any of the diseases outside of the realm of dentistry, but it is necessary that they understand to an appreciable degree the effect of having, or of not having, certain food factors included in the diet.

The writer will not attempt in this paper to go into the various deficiency diseases in the field of nutrition except in certain selected cases as they pertain to the field of periodontology and then only in a limited way.

Scurvy is of direct interest to the dentist and is caused by an insufficient intake of vitamin C. One of the very first manifestations of a vitamin C deficiency is noted in the mouth and secondarily within the rest of the body. Bleeding, such

*Read before the American Academy of Periodontology at Milwaukee, Wisconsin, July 14, 1939.

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as capillary hemorrhage, may be noted in and about the gum tissue the result of a breaking down of the intercellular structures. Figure 1 is of a baby boy eight months of age admitted to the Iowa State University Hospital with an acute scurvy with hemorrhages within the erupting teeth area and throughout the body. Nature usually protects the average child for approximately a year from a vitamin C deficiency in that a supply is stored within their bodies. In this case the child was kept on the regular diet it had been having with the exception that orange juice was administered daily. In seven days the mouth was entirely well and no further hemorrhages were noted in this area. The child was dismissed from the hospital twenty-four days after admittance with the scurvy condition of the entire body healed.

There is little doubt that there are many cases of latent scurvy within the realms of our daily practice because of an insufficient intake of vitamin C. In the approach to all periodontic lesions it would be well to check the relative intake of this important factor and advise patients accordingly. The chief source of this vitamin is from orange or tomato juice, both having about the same concentration. All citrus fruits contain an appreciable amount of this ascorbutic factor.

When bleeding and hypertrophied gum tissue is in evidence one must not be too sure that this condition is a vitamin C deficiency for in some cases it may be more serious. In the case of H. P., a boy twelve years of age (Figure 2) we found excessive hemorrhages but it was not due to scurvy. This boy was admitted to the hospital, January first, bleeding from the nose, gums, and kidneys. A blood transfusion was given immediately and the gums stopped bleeding promptly. The R. B. C. count was 1,290,000 and the W. B. C. 1,450. The bleeding time was six minutes and the coagulation period five minutes. A biopsy of the gums was reported as inflammatory hyperplasia. This boy had many transfusions and on February 21st, his R. B. C. was 955,000, the W. B. C. 5,010, the hemoglobin 30%, and the bleeding time twelve minutes. March 14th, his bleeding time was over one hour and the coagulation time six minutes. The patient died March 16th, and at *post mortem* the case was diagnosed as purpura, probably due to aplastic anemia.

Another problem confronting the profession relates to calcium metabolism. There are many factors and considerations in calcium fixation and retention, and the preservation of normal bone structure about the teeth. The maintenance of bone structure as well as the growth and developmental problems are associated with the child. One must take into consideration the age of the patient, calcium intake and requirement, the parathyroid glands, vitamin D, as well as other possible contributing agents.

The growing child needs approximately one gram of calcium per day for

normal bone and tooth development, and without this average intake deficiencies may be anticipated. A child cannot build bone and tooth structure out of thin air or water, and that is exactly what some parents are trying to do. If a contractor needs 10,000 bricks to build a house and he is allotted only 5,000, there can only be half a house and so it is with the growing child. The easiest place to obtain the required gram of calcium is by taking one quart of milk daily. Comparatively few other foods contain any concentrated amounts of calcium, thus milk is always advised when practical. The adult needs approximately one-half gram of calcium per day for normal bone metabolism.

Every growing child from birth up and including the time of puberty needs approximately 400 U. S. P. units of vitamin D per day. It has been found[1] that optimum calcium retention is obtained if the dose of vitamin D is somewhere between 400 to 600 U. S. P. units per day and preferably not a concentrate. If one is using the Steenbock unitage the above equivalent would be about 150 Steenbock Units. The parathyroid hormone has for its specific objective the maintenance of calcium blood levels between 9 and 11 milligrams per 100 cc., and its hyper- or hypo-function plays an important part in the bone picture.

FIG. 1: A baby 8 months of age admitted to the hospital with acute scurvy. Mouth hemorrhages were cleared within seven days, and the general body subperiosteal hemorrhages cleared within 25 days with the administration of orange juice.

Courtesy Dr. J. D. Boyd and Dept. of Pediatrics, State Univ. of Iowa.

All children that are hospitalized in the Children's Hospital of the State University of Iowa receive a well balanced intake of food and unless an individual is allergic to some specific food, they receive, in the main, the following diet:

FIG. 2: Case diagnosed as purpura, probably due to aplastic anemia.

Courtesy Dr. J. D. Boyd and Dept. of Pediatrics, State Univ. of Iowa.

[1]Jeans, P. C. and Stearns, Genevieve: I. The Effect of Vitamin D on Linear Growth in Infancy. II. The Effect of Intakes Above 1800 U. S. P. Units Daily, *Journal of Pediatrics, 13:* 730-40. Nov., 1938.

For children 3 to 16 years:

The following should be taken EVERY DAY:—

1 quart of milk
1 or 2 eggs
1 serving of meat, fish, chicken, or liver
2 vegetables (½ cup is considered a medium serving)
1 orange or apple or tomato
1 fruit in addition to above
1 teaspoon of cod liver oil
6 teaspoons of butter

Other foods as bread, cereal, and potatoes may be added to satisfy the appetite and maintain correct weight, *but under no circumstances should they replace any of the above.* Encourage the child to eat larger quantities of fruits and vegetables. Use a variety of these so child will not form definite likes and dislikes.

Vegetables:

Class I: Lettuce, spinach, tomato, celery, cauliflower, string beans, asparagus, chard, cabbage.

Class II: Peas, carrots, beets, turnips, parsnips, onions, rutabagas, egg plant, squash.

Both vegetables may be chosen from Class I, but only one should be chosen from Class II.

Potatoes, dried beans, and corn are not counted as vegetables. Sugar used excessively or cereal served more than once a day is likely to decrease the intake of more valuable foods. Eating between meals, except fruit or milk, should be discouraged unless it is certain that the foods taken do not decrease the appetite at meal time. Tea and coffee should not be permitted. Rich pastries and highly spiced foods are considered undesirable. The use of candy or other sweets as dessert accessories is unobjectionable.

The diet contains all of the minerals, vitamins, carbohydrates, fats, and proteins that are essential per day for the growing child. Other foods may be eaten to satisfy the appetite, but these essentials are a daily routine. With such a regimen the average child will develop salivary calculus about the gingival por-

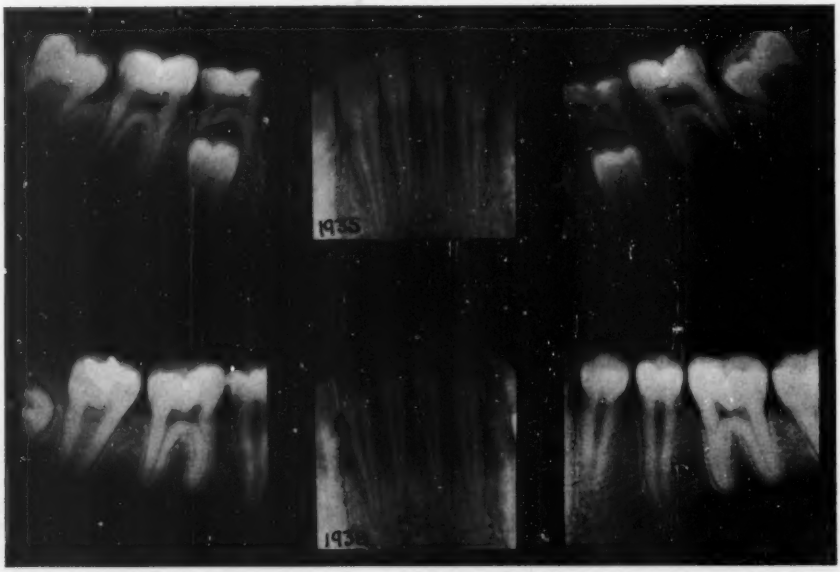

FIG. 3: A diabetic patient that is well under control has normal bone and tissue structure. Patient must follow strict dietary program and have a regular intake of insulin. Note the three year interval without any bone destruction.

tion of the tooth and in many instances a marked serumal calculus is formed. There *seems* to be a correlation between the presence of such calculus and the relative absence of decay. The writer at the present time has insufficient data that has been statistically proved to make a positive statement with reference to the presence of calculus and the relative absence of decay. The departments of Preventive Dentistry and Pediatrics, State University of Iowa, have been collecting such data for the past year with the objective of reviewing the latter.

In the Children's Hospital there is the closest possible relationship between pediatrics and pedodontics and thus a routine dental inspection is made of all in and out patients. There are several hundred regular diabetic patients as well as luetic (congenital syphilitic) patients that the writer observes at regular intervals for tissue changes within the oral cavity. It is most interesting to observe that a diabetic patient on a well balanced dietary program who takes the regular doses of insulin are relatively free from periodontal diseases, as well as dental caries. Patients have been observed from the age of two to 17 years with normal bone, gingivae, and without dental decay. Calculus has been noted in

FIGS. 4 AND 5: A boy, diabetic, who has been under observation from the age of three to thirteen years. Figure 4 shows the present status of the mouth with considerable bone destruction, and a pus exudation from the gum tissues. This boy does not follow an adequate dietary program, and his insulin intake is most irregular.

FIGURE 4

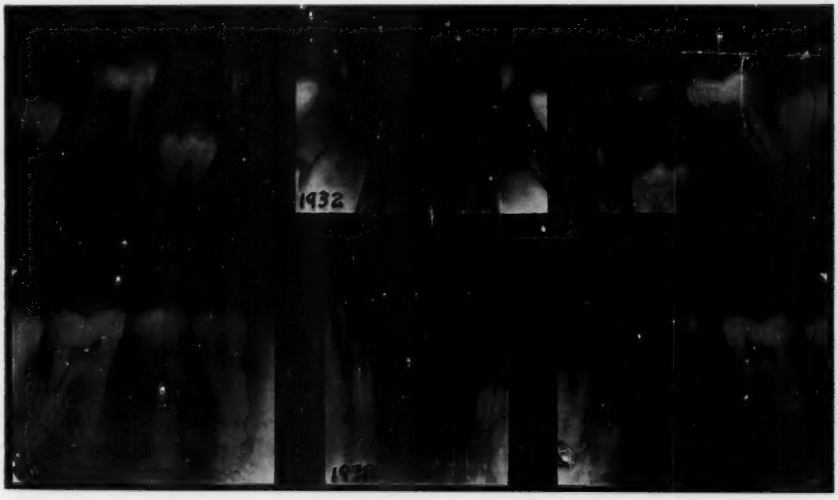

FIGURE 5

many of the mouths as early as the age of two and with marked deposits at three, four, and five years. A patient that has been taught the routine use of the tooth brush and mouth hygiene will keep these deposits down to the minimum and the result is a clean, normal, healthy oral cavity. It is imperative that the child receive systematic care by the mother until the age that the child can assume such a prophylactic routine. Dentistry has been most negligent in the past in not informing and showing the mother exactly how the child's teeth and gums should be brushed. It does not take long to teach the child or mother and the habit thus established in the home will afford a very positive psychological advantage in terms of dentistry as a whole.

Figure 3 is a case (G. L.) wherein the diabetic patient takes very good care of the mouth and also receives a well organized dietary program with the correct amount of insulin. Radiographs of these cases are taken every six months and here are shown the 1935 and 1938 series for comparative study. The bone is normal and the gum tissues are pink and healthy. Figures 4 and 5 are of a boy (D. H.) who has been observed from the age of three and who has never been under good control either from a dietary or prophylactic point of view. His insulin intake is not regular and he is a patient that does not obey the commands that are necessary for a diabetic.

In general, a poorly controlled diabetic patient easily develops a ketosis, which leads to excessive excretion of calcium in the urine and saliva. The calcium is often mobilized from the trabecular bones, including the alveolar bones and tissue reserves. Therefore considerable deposits of calculus may be noted in the mouth although little lime is actually taken into the body. Figure 4 presents a boy now 13 years of age with a great deal of calculus, salivary and serumal, and much of his alveolar bone is destroyed by the lack of proper dietary and insulin control. The radiograms in Figure 5 show the tissues at the age of approximately 8 years and again at the age of 13 in 1938.

Another case (J. F.) (Figure 6), a poorly controlled diabetic case with marked salivary and serumal calculus. Figure 7 shows the radiograms at 12 and 15 years of age respectively. The teeth are loose and there is a continual drainage of pus from under all of the gingival margins.

The disease luetics (congenital syphilis), is also of interest to the dentist in that primary and secondary lesions are usually evident in and about the mouth. In the congenital lues, Hutchinson's teeth are very common in the upper anteriors and the peg-shaped, tapering lower central incisors. The molars are frequently tapering and hypoplastic, and look something like a mulberry. The gum and bone structure in a well controlled luetic is normal and cannot be differentiated from that of a normal child, but the uncontrolled have a decided tendency to dental periclasia.

FIGS. 6 AND 7: Another poorly controlled diabetic. Figure 6 is the condition at present, age 15. Figure 7 shows the radiograms at 12 and 15 years respectively. There is a marked pus exudation, and most of the teeth are loose in the tissues.

FIGURE 6

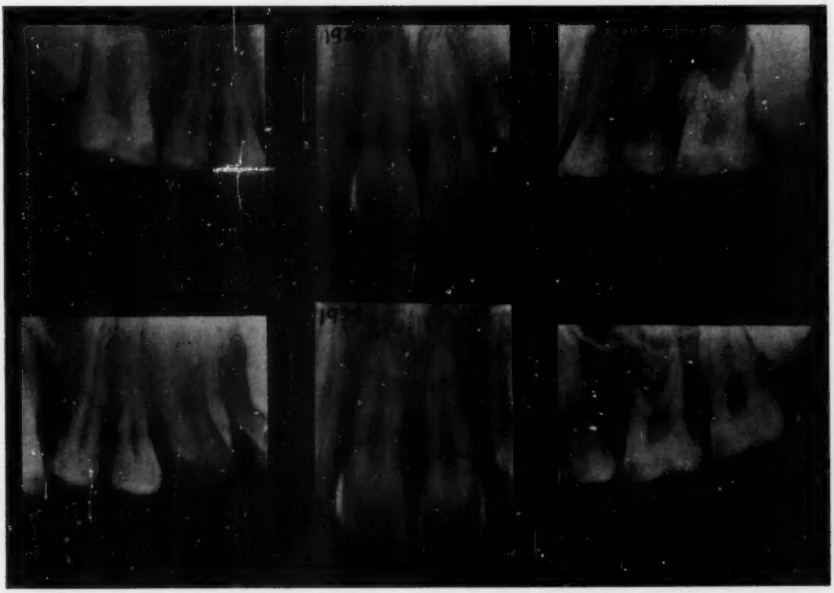

FIGURE 7

In conclusion, diseases and dietary deficiencies in general tend to decrease the resistance and lower the tissue tonicity and in some instances is the exciting cause for general destruction in the oral cavity. The very least that the dentist as the guardian of the mouth and its structures can do is to be cognizant of the probability of disease, the variations from the normal, and to have a fundamental concept of the principles of nutrition.

Vincent's Infection: Retrospect, Suspect, and Prospect*

By F. D. Francis, B. S., D. D. S.
Iowa City, Iowa

PROBABLY MOST of you here remember when lesions which nowadays by the majority of dentists would be called Vincent's infection, went by the descriptive terminology, ulcerative gingivitis. The inadequacy of the term consists in its failure to differentiate etiological factors and hence, left treatment to the uncertainties of empiricism. No blame attaches to this method of handling these cases at that time; rather should the pioneers be commended for attacking the condition with all the drugs at their disposal and for applying them with as many different technics as there were dentists. Out of this experience and through the medium of dental meetings and dental literature, were finally sifted a few drugs and a few technics which, because of their specificity, pointed to some definite causative agent. Thus was launched investigative research which finally established the fact that a spirillum and a fusiform bacillus were together responsible for one of the worst forms of ulcerative gingivitis. For some time it had been known that two such organisms produced the throat condition called Vincent's angina, but for some reason they were not generally suspected of causing oral lesions. As is usually the case with new findings, so soon as this relationship was established, immediately all cases of ulcerative gingivitis became *ipso facto* Vincent's infection. Now, some twenty years later, we are coming to the realization that ulcerative gingivitis has other etiology. It is comforting to know that, nevertheless, probably the worst form of it is caused by these two infectious agents and, that we can, by dint of thorough application of a number of specific drugs, bring the process under control. Let me repeat this last remark for although it is not the theme-song of this paper, I do not want to seem to contend that there is only one method for handling Vincent's infection. We can, by dint of thorough application of a number of specifics, bring the process under control. I believe that you will agree with me that bringing the infection under control is merely the initial step in eradicating the symptoms. The implication is, and again I believe you will agree, that Vincent's infection is not cured in the sense that the term is ordinarily employed. There are several drugs which are about equally efficacious providing they reach the organisms. In other words, thoroughness in the application of a drug is more important in the subjugation of the infection than is the drug itself.

Further in retrospect, some of you in certain locations may have noticed as we have, that acute Vincent's infection has become a rarity and even chronic cases have been greatly reduced in numbers. Ten years ago in our infirmary, there were enough acute cases for each student to treat five patients. This was at a time when classes were running 45 to 60 students. These cases were the typically acute kind in which the virulency of the organisms was so high that their toxins not only produced extreme destruction of gingivae and alveolar bone in some instances, attended with systemic symptoms, but apparently killed off

*Read before the American Academy of Periodontology at Milwaukee, Wisconsin, July 13, 1939.

other mouth infections or reduced their activity to a minimum, so that the picture was uncomplicated. During the past three years we have seen scarcely a half-dozen cases of this sort. Our worst cases today present only subacute symptoms of not too severe inflammation and none of the systemic symptoms. The microscope picture may show the spirillum and fusiformis in about the same proportion as in the typically acute cases but unlike those cases, there is present also, many various organisms, not the least of which is a fungus material. If the virulence-toxicity premise for explaining the scarcity of mixed infection in the typically acute cases is a correct one, then we may logically assume that the same organisms of the present-day cases are neither so virulent nor their waste products so toxic. The fact that systemic symptoms are lacking and that the marginal necrosis is absent in the face of endemic spread would seem to support this view. One other observation on these cases is their failure to respond readily to treatment as do acute uncomplicated cases. It would seem that treatment efficacious for acute cases would be equally so for chronic cases. By persistence in this belief and by employment of our routine treatment for acute cases on chronic cases, experience has led us to the conclusion that the apparent stubbornness of these so-called "stubborn chronic cases" is not due to any inherent resistance of the Vincent's organisms but is due to a fungus material, normally present in the mouth and normally producing little or no irritation. This fungus in some peculiar manner, keeps the threshold of tissue resistance just too low for the tissues to make the necessary final gain for the come-back. Apparently this fungus material is uninhibited by the chronic Vincent's by-products and by the specifics employed, and moreover, it exerts an irritating action somewhat in excess of its normal activity. In effect it operates to keep the inflammation active, interferes with nutrition, and prevents the natural tissue resistance from asserting itself. Evidence that the complicating factor may be a fungus material is the fact that such organisms are found in the mouth smears and that by the employment of a fungicide in conjunction with a Vincent's specific, these cases are rendered practically as responsive to treatment as are the typically acute cases.

Just what this fungus material is, whether a particular kind or combination of fungi, so far as we know, has not been established. No doubt, in some instances a pathogenic fungus is responsible, but in the majority of cases it is the normally present fungus which is responsible; unable in itself to produce sufficient irritation to precipitate an inflammatory process but capable of sustaining an already precipitated inflammation. Unquestionably there are cases of more or less severe gingivitis simulating closely chronic Vincent's of low grade and which are kept active in the presence of mechanical irritation such as overhanging restoration margins and gold shell crowns, and pyorrhea pockets. We have seen and treated many such cases. Our diagnosis was based upon the absence of a Vincent's picture in the mouth smear, upon the finding of fungus material in the smear and finally upon the very quick response to the fungicide, copper sulfate. Other cases showing a small proportion of Vincent's organisms, failed to respond to Vincent's treatment but yielded readily to fungus treatment. By far the great majority of these cases indicated a primary Vincent's infection complicated by fungus as diagnosed on the basis of treatment response. These cases gave early indications of complete recovery when attacked by our routine Vincent's treatment but soon reached a point beyond which we could not carry them until the fungicide was used. These cases constitute the class of cases referred to by so many practitioners as the "old stubborn chronic Vincent's."

On the basis of these findings we therefore proceed on the assumption that all cases of chronic gingivitis are complicated with fungus infection, regardless of a history of recent acute Vincent's infection, for by the time chronic symptoms predominate, the germ-destroying properties of the acute toxins are so reduced that reinfection by fungus is possible. Also, we suspect, and believe that there is sufficient evidence to prove, that although the symptoms accompanying Vincent's infection may have been eliminated, the reduced organisms remain as residual infection and that so far as the individual patient is concerned, he simply has acquired two additional organisms which become members of the normal oral flora. As evidence of this contention, recall in your own experiences the almost certain

recurrences which accompany neglect of oral hygiene from any cause whatever but more particularly when the individual becomes acutely ill or suffers debilitation from long continued chronic illnesses. Recall inability to get negative smears, successively. There is no gainsaying that Vincent's infection may be a second time, a third, or any number of times acquired. While there is little scientific proof, there is every reason to believe that Vincent's organisms transplanted from a mouth of a given tissue resistance to a mouth of lesser tissue resistance will quickly increase in virulence and may produce symptoms accordingly. *Vice versa*, organisms transplanted to a mouth of greater tissue resistance will be subjected to further reduction in virulence and toxin production and therefore, rendered unable to produce symptoms. Technically, such individual has sustained an inoculation; he has become infected and to that extent, he may be said to have Vincent's infection. He may furthermore be classed as a carrier. Possibly this is the rationalization for the contention by many that Vincent's organisms can be found in all mouths.

This discussion would not be complete without some reference to our routine method of handling these cases in our infirmary. Our problem there is not only to find successful treatment but to find treatment that can be rationalized to the extent that it makes good teaching material. The method finally evolved and which is now routinely employed is quite simple in technic. Vincent's organisms being anaerobic, suggests the utilization of oxygen-liberating compounds together with specific dyes or stains. How to bring these agents into direct contact with the organisms buried in the deep pockets and in the tissue spaces, is the big problem. Spraying and rinsing the mouth, packing the interproximal spaces with sodium perborate is effective on the surfaces but does not reach the deeply hidden infection. These deep seated foci undoubtedly keep the infection active by supplying exactly, the requirements for reproduction. Naturally these organisms are the most virulent but as they find their way from the low-oxygen-tension pockets to the mouth cavity they lose in virulency, their products are less toxic, and they finally succumb to the oxygen-bearing compounds and specifics encountered at the surface tissues. Seemingly, a happy solution to the problem would consist of a combination of a method of forcing gaseous oxygen into the pockets and injecting a deeply penetrating dye or stain. It seemed to us that the probability of overcoming the resistance of the tissue capillary spaces to the absorption of the oxygen gas was no greater than in the method of using oxygen-bearing compounds, so, pure oxygen under pressure was not tried by us. For some time we had been using chromic acid to loosen necrotic tissue. We assumed that the drug was absorbed by the necrotic tissue and therefore, penetrated as deeply as the necrotic tissue extended. Not only does chromic acid tend to loosen this necrotic tissue but there is some evidence that it acts as a mordant on the vital tissue, thus insuring somewhat deeper penetration of dyes and stains. In connection with the employment of chromic acid it was observed that hydrogen peroxide reacted with the acid to liberate nascent oxygen and that the gas apparently bubbled up from the bottom of the pockets, indicating deep penetration, possibly so far as the necrotic tissue extended. Obviously, what was happening was a duplication of chemistry test tube reaction in which we know that exchange or displacement of radicals takes place in every part of the solution, bottom as well as top. Here then was the means to insure the liberation of oxygen at the very bottom of pockets and in the capillary spaces radiating from them. This nascent oxygen accomplishes two objects, first, it literally cooks the organisms and second, it mechanically removes a portion of the pocket debris, thus insuring a better chance of dyes and stains reaching the vital tissue. The use of chromic acid in conjunction with hydrogen peroxide produced the best results we had yet had, but evidently, still a few organisms were escaping more or less unharmed to carry on. On the assumption that these organisms came from the vital tissue spaces beneath the eroded areas, we tried the experiment of saturating the pockets with aqueous ten percent mercurochrome immediately following the chromic acid-hydrogen peroxide attack. The result was an improvement but something still was lacking. The complementary touch was found when we began using the rule for sterilization in bacteriological practice; a treatment on each of three successive days at least. This gave us a method which

has proven highly successful in the hands of inexperienced students.

As is the case in most operations it is necessary to observe a few precautions. Instrumentation, we think, should be postponed until the infection has been brought under control as evidenced by disappearance of soreness, pain and to some degree, swelling and redness. This is to avoid further irritation or better, additional irritation with its consequent superimposed inflammation. Although the infection may be brought under control, that is, so reduced in virulency as to be unable to set up disturbances, the inflammation in the gingivae will not completely subside so long as any irritant is present in any form what-so-ever. So long as inflammation persists, the case cannot reasonably be said to be cleaned up because the symptoms almost certainly will recur.

Last but by no means least in the course of treatment is the degree of oral hygiene maintained by the patient. Because of the residual infection, these patients may not neglect their mouths to the same degree as patients who have never contracted the infection. Neither may a dentist expect to bring these cases under complete control so long as there are present local areas of irritation such as overhanging fillings, open caries, gum flaps, or fungus material. Of these, probably fungus material is the greatest offender. As stated above, we proceed on the suspicion that all of these cases are complicated with one or more of the various fungi. We have found that the majority of them which are definitely so complicated, make quite satisfactory response when copper sulfate is added to the mouth-wash which is routinely supplied. A one to one-thousand strength solution is employed. Where this simple addition does not suffice to control the fungus as evidenced by inability to carry the case to completion, or in other words, where we get good response up to a certain point beyond which there is little or no improvement, we then resort to the pack method. Concentrated copper sulfate packed into the pockets and all spaces and left in contact with the tissues three to five minutes, the while swabbing the teeth and oral tissues with a saturated solution, is highly fungicidal. One such application is sufficient if no foci are missed. At the same sitting and immediately following the copper sulfate, the routine Vincent's treatment consisting of first, chromic acid followed by hydrogen peroxide and second, ten percent mercurochrome, is given, and repeated on two successive days.

With us, results have been uniformly good and usually recurrences are admittedly due to relapse on the part of the patient. Recurrent cases are treated exactly as if they were primary infections and chronic cases exactly as if they were acute.

The instrumentation is exceedingly simple, requiring only medicine dishes, spray for the hydrogen peroxide and a specially constructed applicator made by clipping the point of a number four barbed root canal broach, dressing down the barbs but not eliminating them. A very few fibers of cotton are wrapped thereon, the shank bent at a convenient angle and the chromic acid thereby conveyed to the pockets and thoroughly pumped to the bottom. After a section of the mouth has been so flooded, the hydrogen peroxide may be lightly sprayed over it. Forced spraying will dislodge the acid and defeat the oxygenation. Allow sufficient time for the reaction to go to completion as indicated by continued black color and no further evolution of gas bubbles. Following this, flood the pockets with ten percent mercurochrome or other dye or stain. Provide the patient with the fortified mouth wash and instruct him to return the very next day, at which time observations are made and the process repeated. So far as mouth washes are concerned, they at best can do no more for Vincent's infection than possibly maintain the *status quo* following treatment at the chair, until a successive treatment is given. Apparently their greatest use is as a palliative and to serve as vehicle for fungicide as we employ it.

In conclusion it may be said that the status of Vincent's infection today in our locality is about on the level with a first grade gingivitis due to any other cause. This may have come about because of a combination of factors such as education of the patients, efficient methods of treatment, and very likely, because of its position at the trough of the wave instead of the crest, as the malady swept across the country apparently from East to West. Cardinal factors making for efficiency in handling Vincent's infection cases may well be, first, thoroughness of application of medicaments

selected, second, treatment at sufficiently close intervals to catch the adult organisms following whatever method of sporulation takes place, third, refraining from imposing further irritation and consequent inflammation upon the already injured tissues, fourth, removal of all sources of irritation and injury following control of the infection, fifth, securing of adequate circulation for purposes of nourishment and defense by means of oral hygiene, sixth, improvement of general systemic conditions by means of all the health measures available and seventh, instructions and warnings on the various means and modes of reinfections and recurrences under conditions of neglect and illness.

And now finally, a word on intravenous injection. As an adjuvant, such procedure possibly may be valuable, but judging from the many cases which have come to us after primary treatment by injection, the method is inadequate. These cases showed the ravages of acute symptoms which could have been prevented by early treatment by a dentist, and they also exhibited the consequent chronic symptoms. As primary treatment, we feel that intravenous injection is one of the best means of inducing chronicity. Next best is the physician's method of swabbing the surface of the gums and prescribing a mouth-wash. It is our opinion that physicians would do better to refer these cases to dentists who are equipped to handle them in the only way they can be successfully treated.

The future of Vincent's infection is unpredictable in its performance but apparently it is under complete control in its present status. If it follows, however, the lead of other scourges, we may expect another wave in the course of time and particularly may we expect it in the event of another world war.

State University of Iowa

Periodontal Sepsis in Relationship to Systemic Disease*

By RUSSELL A. SAND, D. D. S.
Fargo, North Dakota

THE RELATIONSHIP of oral sepsis to systemic disease has undoubtedly been responsible more than any other single factor in elevating the profession of dentistry to its rightfully deserved place among the healing arts. The increasing knowledge of anatomy, bacteriology, pathology, and physiology carved for the physician a new place in society far superior to the barber surgeon of earlier medicine. When the theory of focal infection was proven the dentist also emerged from the class of a technician or artisan to become the physician and surgeon of the mouth.

Long ago our dental colleges realized it was not sufficient for a graduate merely to be able to fashion a good filling or bridge in order to qualify as a practitioner of dentistry. Within the past several years colleges have required that every graduate be well grounded in the basic sciences and other courses which would fit him to assume this new role and thus better serve society.

When medicine and dentistry determined that teeth and their investing tissues were an integral part of the human body as well as any other living tissue or organ the battle against oral sepsis began. As long ago as the days of Hypocrates we are told that diseases were cured by removing infected teeth but many superstitions and much quackery confused the issue. Not until the past several decades with their ever increasing scientific knowledge did research workers prove con-

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clusively that oral infection could definitely cause systemic disease.

The controversial pulpless tooth, though I cannot personally say much else in its favor, has been a pioneer in making all dentists more diagnosis-conscious and more careful what teeth are allowed to remain in the patient's mouth. This pulpless tooth problem is often confusing but it is the roentgenologic pulpless tooth which has in reality caused the endless argument. The question whether all such teeth should be removed or not is beside the point since we know teeth of that type have been proven a focus of infection. Thus it remains for the dentist and physician in charge to decide whether that particular patient has the resistance to afford to gamble on tolerating a potential focus.

I have mentioned the pulpless tooth to suggest that possibly once again we may not have seen the trees because of the woods and have assumed that this periapically infected tooth is the only dental focus. In my opinion periodontal sepsis represents one of the most vicious foci with which we as dentists deal. The very nature of the disease—a painless, chronic, seemingly innocent affair almost brands it oral foci menace number one. Even if we grant that every pulpless tooth is not infected we must admit that every tooth affected periodontally is theoretically infected and must be treated or removed to eradicate the existing infection. Without attention every periodontal lesion remains as a potential focus of infection and as such must not be underestimated in making an oral diagnosis in search of possible foci.

Just as it is much easier for the physician to diagnose an acute appendix as compared with a low grade chronic one, so it is easier for the dentist to diagnose an acutely abscessed tooth rather than a hidden chronic condition involving the investing tissues of the teeth. Most systemic diseases which might be caused or amplified by a dental focus are usually traceable to a chronic but active symptomless infection.

In the literature dealing with oral foci many authors state that alveolar abscesses (usually referring to periapical abscesses), are of greater pathologic importance than periodontal lesions. To this statement I am inclined to take exception chiefly on the basis of clinical experience, but considering laboratory theory as well. The chief arguments given are that periapical abscesses lack drainage, are usually symptomless, therefore often overlooked, are subject to the pressure of mastication thus forcing their bacterial inhabitants into the blood stream more readily, and lastly that they are blind and localized hence a more serious menace than those including soft tissue where expansion is possible.

Referring to these arguments: periodontal lesions are both of the type that lack drainage and the type that does not. Hence transmission of septic material can take place, (1) metastatically, (2) by direct extension through swallowing and (3) by transmission along mucous and serous surfaces. Considering that the gastro-intestinal membranes are merely a continuation of the same type of tissue as the oral membranes we must place no little importance on this factor. Furthermore, since periodontal lesions in general are not walled off as most granulomas they constantly are subjecting the system to ready absorption. The contention that the alveolar abscess is less symptomatic and more readily overlooked by the patient seems a trifle absurd considering the high percentage of patients who must be told by their dentist they are suffering from periodontoclasia as compared to those who do not know they have pulpless infected teeth. Considering the pressure of mastication, periodontally infected teeth are if anything of greater importance as a focus since the teeth thus affected are usually looser therefore, can mechanically pump more septic material into the circulation. The argument that periapical abscesses are blind and localized therefore more important than one that can expand seems slightly illogical since an expanding area continually increases the area of absorption.

Bacteriologically the periodontal lesion seems to present evidence of as important a focus as we know. Superficial lesions disclose streptococci, staphylococci, pneumococci, diplococci, bacilli and amoebae. Deeper areas disclose streptococci viridans and hemolyticus, staphylococci aureus and albus and the amoebae. Judging from the types of bacteria isolated from structures which have been proved to be affected by remote areas of infection, it appears that gingival and periodontal lesions harbor an abundant crop of these same organisms.

Locations of foci usually given are the

teeth, their investing tissues, tonsils, sinuses, prostate gland and cervix uteri. Of these only the periapical abscess has less drainage than the periodontal lesion. The importance of other areas as possible foci is unquestioned, hence in all of our studies and practice of periodontia the first and foremost consideration should be: is the lesion affecting the health of the patient? If it can be, let our treatment be governed accordingly.

For almost ten years I have been associated with a medical group composed of twelve physicians and surgeons. This association has enabled me to follow up medical histories of patients in whom systemic conditions have been improved or cured by the removal of oral foci. Several conclusions have seemed evident.

Vague, chronic, non-specific gastro-intestinal disturbances have appeared to be the commonest conditions responding to the eradication of periodontal disease. In this class should also be included low grade mild appendicitis, cholecystitis and glomerulo-nephritis as well as chronic diarrhea and spastic constipation. Not far behind would come the various types of arthritis, myositis, acne, and other dermatoses. Cases of subacute bacterial endocarditis and other heart lesions have been traced to investing tissue pathology. Headaches of various types have been definitely improved or eliminated by eradicating chronic oral sepsis. Results in cases of headache are more easily determined since no other treatment other than palliative sedatives was given.

We feel that many other conditions have been more or less directly responsible to chronic oral sepsis and that all diseases responded better to other treatment when that sepsis was eliminated.

A surgeon in our group with thirty-five years experience says he has saved hundreds of patients surgical intervention in very mild attacks of appendicitis and cholecystitis by eliminating chronic oral sepsis. He insists that all cases of that type, not definitely diagnostic, first receive thorough oral diagnosis and treatment. The orthopedist although when he glances in a patient's mouth cannot see periapical pathology demands that any gingival and periodontal pathology be eliminated in arthritic conditions—this pathology he can usually see in the mouth.

It is virtually impossible in a private institution to use patients as controls but it has been possible in enough cases for us to prove that the elimination of oral sepsis alone will clear up some cases of systemic disease. Neither has it been possible always to segregate purely gingival and periodontal sepsis from periapical but in enough cases out of several hundred to at least convince ourselves of its importance. The procedure we followed was to remove still vital hopelessly involved teeth, then to follow with the removal of non-vital infected teeth after having determined a result from the first procedure. I only used cases where overlapping medical treatment was negligible or not used at all. Long drawn out periodontal treatment makes results harder to prove than by extraction of hopelessly involved teeth because of the greater opportunity for other treatment factors to confuse these results.

Citing case histories is a very effective means of illustrating the subject matter of any paper and proving one's contention. Time does not permit however, so I will but say that I have several score of these case histories to prove that periodontoclasia is definitely not a mythical focus. One brief history follows: A female patient aged 60 presented with arthritic symptoms of several months standing. Her oral diagnosis was essentially negative except for extensive periodontal involvement around two poorly fitted shell crowns carrying a bridge from first bicuspid to second molar. Both teeth were vital. Within ten days after the bridge had been removed and the lesions treated her symptoms disappeared. A week later the patient insisted on having the bridge replaced against our advice and several months later her symptoms returned with a similar but not as extensive involvement in the same area. The same procedure was followed including her insistence that the bridge be replaced following the disappearance of her symptoms. Upon the return two years later of the same condition the bridge was again removed but this time I accidentally dropped the bridge and stepped on it so it could not be replaced. It is now several years later and the arthritic symptoms have not returned. No other treatment was instituted and the arthritis is apparently gone to stay.

It would be presumptive for me to tell a

group of periodontists as capable as the members of this group which teeth affected periodontally should be removed and which should be treated. However, there is one fact we should always evaluate in advising treatment of any case, that is the systemic tolerance of the patient. At times we may be a bit over zealous in treating advanced periodontoclasia which requires long continued treatment when the patient's physical condition will not withstand the shock of repeated stirring up of infected areas. We have all noted the shock which sometimes results from the removal of an infected tooth—fortunately it is short lived in most cases since the patient's defenses come to the rescue rapidly and the liberation of the microörganism comes in one operation. Successive curettage of periodontal pockets, however, produces a shock at each operation somewhat the same as if these toxins were injected directly into the system. I have followed several cases of infectious arthritis, over a period of a year in which each periodontal treatment instituted to save questionable teeth, produced a flare-up of symptoms. Where there is suppuration present in lesions well advanced and where the prognosis is at best questionable we can do the sick patient a great service by advising removal of teeth thus affected. Should treatment eventually clear up the focus of infection, if too much time has been required to accomplish this, irreparable damage to the patient may have been done. We may point with pride to a beautiful result in saving badly infected teeth but of what value are these teeth to a patient who has expired.

In conclusion I would like to say that it has not been my intention to weigh periapical sepsis against periodontal sepsis as potential foci. Both are potential foci. Nor do I wish to be classified as a tooth or tonsil jerker according to the standards of two Philadelphia physicians who a short time ago included some of us in that category. Neither do I wish to be misunderstood by this group when I mention the eradication of periodontal sepsis. The conservative or radical procedure is up to our judgment as individuals. If lesions about the teeth *can be treated,* instead of removing the teeth, let them be treated. But at all times let us beware for we are dealing with a tinder box of infection waiting to be touched off by the spark of lowered resistance. The periodontist led the way in the pioneering venture of saving teeth affected with periodontal disease—let him continue a similar mission in saving health and human lives.

Some Observations on Pyorrhea Alveolaris in Texas: 1896-1939*

By JAMES O. HALL, D. D. S., F. A. C. D.
Waco, Texas

I WISH to present to this body the observations and reactions of intermittent study over a period of forty-three years, of various dyscrasias and diatheses dealing with the investing and supporting membranes of the teeth, sometimes called "Riggs' disease," "pyorrhea alveolaris," "calcic and phagedenic pericementitis," and of late, "periodontoclasia." Some personal views as to what this learned body should do towards a more practical and personal education of the general dentist in the fundamental knowledge of this subject will be included, to the end that all dentists may at least be sufficiently educated to recognize this insidious malady in its early stages, when it is controllable, and do something about it—or else, be honest and sincere enough to refer the patient where he will receive proper treatment.

The fundamental knowledge of this subject has been handed down to us, free of charge, by students, observers, and research workers of the past, who labored earnestly without thought of fee or reward, that succeeding generations might profit by their efforts. Regardless of limitation and obstacles we should cultivate a desire for personal study, observation, and experimentation, in order to alleviate this positive menace of periodontal disease to the health and happiness of mankind.

Perhaps the greatest dentist that ever lived was the universally beloved Dr. G. V. Black, who, in the year 1899 gave us the best and most practical classification of

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periodontal disease yet found in dental literature. He recognized two distinct manifestations of this disease, requiring different methods of treatment and a different approach.

Dr. Black called the *local* variety, "calcic pericementitis," which is probably due to faulty mastication and poor mouth hygiene, resulting in a lack of proper stimulation and healthful circulation in the periodontal structures. He also recognized another much more virulent and destructive type, which undoubtedly had some constitutional imbalance as its predisposing cause. This particular type of the disease, he called "phagedenic pericementitis," due to dyscrasias and diatheses, which, we now believe may be produced by dietary deficiencies or imbalances. This form inevitably results in a systemic toxaemia. This toxaemia cannot occur, however, until there is produced a functional disturbance of the secretory and eliminatory organs of the body resulting from a constant faulty elimination of the natural body wastes.

Dr. Black and many other careful and discriminating observers, had long since discovered the intimate connection between inflammatory conditions in the mouth and bilious or toxic conditions of the body. So they very rightly considered there were different causes and different treatments necessary for the control of these various types of inflammatory conditions of the mouth and periodontal structures, as they understood them at that time.

I have not been able to discover any great advance in the etiological or treatment theories since that time, except refinements in the technique of instrumentation, medication, practical, or so-called practical, mouth hygiene, and surgical drainage. Very little has been added to the fundamental knowledge of this disease in the last forty years. I am an optimist, however, and I hope and believe something is just around the corner.

I would offer a bit of advice to young dentists—be careful as to what you consider *new* ideas in regard to the etiology and treatment of periodontoclasia. You are justly due consideration for any ideas you have personally developed, regardless of whether someone before you has arrived at similar conclusions. If you have arrived at a certain conviction by independent thought, give yourself a slap on the back and "Bind it to thyself with hoops of steel." Because it is as much a part of yourself as the language of the immortal Shakespeare when he gave this injunction to the youth who wanted to be on his way. *Record and keep your individual thoughts* and by comparison in the years to come, with the then proven theories of other men, you may be able to evaluate your addition to the sum total of human knowledge regarding periodontal disease.

In my admonition to the young dentist not to go too far in the advocacy of his personal claims to individual and new thoughts relating to his observations or treatment of pyorrhea, I wish to cite an incident that occurred in this connection in Texas.

For some years there was a friendly rivalry between one of your first presidents—Dr. Julian Smith—and myself, as to who had used the first "Surgical Pyorrhea" treatment in Texas. It was never settled, for when I had prepared my data and was about ready to unload it on him, I ran across an old treatise on inflammatory conditions of the gums, written more than a hundred years ago, that changed my attitude completely. This article was shown me by an old friend, a physician, but I cannot now locate it to give credit to the author, yet I remember this much quite distinctly.

The writer gave a minute and graphic description of a splint for the remaining loose and sore teeth, (posterior teeth had been extracted). After this description of a mechanical splint, which would be a credit to anyone of the present day, he made the following significant statement: "If, after the splint is put in place and securely holds the teeth immovable, the patient being willing and having enough money to meet the expense (which would of necessity be rather large), then I would by use of the scalpel, gouges and scrapers, remove this inflammatory tissue; and after treatment would expect a fine healing of the parts."

Surgery, other than extraction, was probably done many years before his time, which leads us more firmly to believe that, "There is nothing new under the sun." Dear Julian died soon after this and I hope, carried into the great beyond a firm conviction that *he* was the *first* of Texas dentists to envision surgical pyorrhea treatment for thousands

of hapless mortals in this section of the world.

While yet a student in Vanderbilt University I was privileged to spend an entire night with Dr. Black in his hotel room, discussing all phases of dentistry but particularly, pyorrhea. The subject always fascinated me, and I had the temerity to speak to him about it as follows: "Dr. Black, I have read some of your articles on pericementitis but c a n n o t understand them." He looked at me intently for a moment and said, "Young man, a student is not supposed to understand that subject, in fact, no one at the present time does. The important thing is, do you want to understand it? If so, you are in a position that will force you to study and record your findings. *It is only through personal study and application that you will succeed in the treatment of this disease.*"

As the years have come and gone, the truth of this latter statement has become more and more apparent. I have finally arrived at the conclusion that you cannot teach a young dentist how to treat pyorrhea but only the fundamental principles underlying the disease, and that it is only through study, observation, and intelligent, practical experimentation that the art of treatment may be attained.

PERSONAL LIMITATIONS

Perhaps some personal history might be of interest. In the spring of 1896 I came to Waco, Texas, from a small Arkansas town, having finished the so-called High School work of that day, to read dentistry under a man who himself had read and practiced under a preceptor. I thought him a very wise and learned man; for did he not have a whole armful of leather-covered books, and nearly one hundred instruments of various kinds? The books consisted of *Gray's Anatomy*, Harris' *Principles and Practice of Dental Surgery, Gorgas' Dictionary*, and *Dental Medicine*, and three handsome new volumes of the *American System of Dentistry* compiled and edited by Wilbur F. Litch. These volumes were a wonderful contribution to the dental literature of that time, for each subject was presented by a man specially qualified in that particular branch. Almost every successful dentist of that day had a set of these books, but as I was later to learn, few read or studied them comprehensively. Only the articles that had a very practical application to extracting, filling, and making plates, ever showed traces of thumbing. Invariably, however, they were placed in a very conspicuous place in the office!

Imagine if you can, a raw country boy with little real education, wading into those ponderous volumes in search of knowledge and understanding, with practically no help from the outside! I wrestled faithfully with them all, but gained little or nothing except headaches and sleepy eyes. I had nevertheless a very decided and reverential awe for those mysterious books and for the supermen who had written them. So great was this worshipful awe, that to this day I feel inclined to believe everything within the covers of a leather-bound book.

But I had gained something I knew not of, at that time. This contact with books and writing I could not understand, in some mysterious manner engendered within me a desire to increase my very limited education to the point where I might understand something of what these authors were writing about. This impression was a positive one and I acted upon it as best I could. For anything I have achieved in the general practice of dentistry I give credit to the overwhelming, staggering, and awe-inspiring jolt I received from those dear old books.

Naturally I spent most of my time with the beautiful new volumes of the *American System of Dentistry*. Whenever I had exhausted my energy and had about gone to sleep on the "teeth of the invertebrata and vertebrata"—or "dental histology and embryology" and found myself *non compos mentis* so far as those subjects were concerned, I would turn over to the back of Volume One—where they had seemingly used Dr. Black's article on "Calcic and Phagedenic Pericementitis" to fill out the required number of pages in this wonderful book. For some reason this article always woke me up. There was something real and tangible about it. Something that I could, in a way, visualize, for I had already seen many loose teeth, bleeding gums, and had learned to recognize that terrible odor that came from a filthy and uncared for mouth, and I had begun to feel that at some time in the future I could render some service to these afflicted patients.

Please bear in mind that at this time I had been reading and practicing dentistry

for two years, and thought I had mastered the art of extracting, filling, making gold crowns, and plate work. Somewhat apt with my hands and imagination, I was getting along fine! My preceptor could not understand *why* I wanted to go to college. To his everlasting credit, however, he made it possible for me to go and for that I shall always love him.

PERIODONTIA IN TEXAS SINCE 1896

My experiences being fairly typical of the average dentist of this section of the country during that time, I ask your pardon for the personal references. The treatment then commonly used was first, as now, instrumentation. But the instruments were generally few in number and very crude and clumsy in design; often more harm than good was done by their unskillful use. It is true, there were a few delicate instruments on the market, such as the Cushing set of push scalers (which included one hoe), D. D. Smith's wonderful set of files were available—but few knew how to use them, or why, and Younger's instruments—the technique for their intelligent use was unknown even to recent graduates of well known dental institutions.

An instrument was generally chosen that looked as if it would remove tartar by strong arm methods. After the so-called scaling, which had become a byword of the dentist, had proceeded to the point where the operator considered he had earned his dollar, then the medication was thrown in for good measure, and consisted, in the main, of the good old stand-by—Tr. Aconite and Tr. Iodine, *ad libitum*. This was and still is a good remedy when an uncomplicated inflammation is to be dealt with. But when masses of spirochetes and spirillae are present, or a Vincent's combination, then it becomes wholly inadequate.

This then was our general set up. There were a few progressive and hardy spirits, however, who were keeping up with the journals containing articles on pyorrhea under various names. Many theories as to the etiology and treatment were suggested. Foremost, and most popular was the acid treatment. Almost every known acid was used in varying degrees of strength, even to hydro-fluoric, which would dissolve any containers, excepting those made of wax. The theory was, that besides being a stimulating and cleansing agent, it would also soften up and dissolve the calcic deposits, which many believed caused the disease. This indeed it did and marvelous were the *temporary* results. But, unfortunately, it had the same action upon the tooth structure and left it in such an etched and sensitive condition, that the most gullible among us soon had to give it up—or modify its use to such an extent that it was of no service whatever.

Phenol and phenol combinations with camphor and the essential oils were used by a few progressive men who claimed good results, but generally, because of faulty technique and poor results other men passed back to the good old tinctures of aconite and iodine. Peroxide of hydrogen had its faithful devotees, who claimed much for it. But its effects also while seemingly good in the beginning, proved transitory and fickle, and produced an acid reaction that soon left the teeth uncomfortably sensitive; various antacids including silver nitrate were used to counteract the various acid treatments, but on the whole were unsatisfactory and most of the cases would have been better without medication.

These various treatments were all aided and abetted or injured and retarded, according to the way we look at it, by mouth washes containing various drugs, veritable "shot gun" preparations, practically all of which were strongly astringent—to make the gums shrink and cling tightly around the teeth. This astringency was fine for the mutilated gums, but not so good where there were deep pockets.

In due time we went through the "Emetine" and "Autogenous Vaccine" treatments, but they were soon generally discarded. There were some of us, however, who were not completely satisfied with results from any of the treatments then in vogue and kept hoping for some inspiration to help us out of our dilemma.

I had by now become a full-fledged graduate of a well-known dental college and felt my responsibilities keenly, so I decided to solve the pyorrhea problem myself, thereby gaining fame, honor and gold—*but it just wouldn't be solved.*

I did make a few observations, however, that helped me to accomplish something. First, I discovered that after stripping and finishing approximal gold fillings, many of which were placed in badly diseased teeth

with suppurating pockets, that after the gums healed the teeth were invariably firmer and the inflammation much abated. Consequently, when the first thin sail-cloth finishing strips came out, I ordered some made three times the length of the ordinary strip. They were very thin and tough and the cuttle-fish abrasive made a fine polishing agent for my unskillfully "scraped teeth" and gave me amazing results which lasted much longer. I still use them coated with mentholatum or vaseline, with a great deal of satisfaction.

There was one class of cases I could never get any permanent results with—those with deep, suppurating pockets. I could curette and clean out the areas with some delicate pull instruments I had made myself from old worn out instruments, thinning the shanks and turning and tempering the working point to about a 45° angle. Yet after such treatment, the case doing well for a few weeks, the old enemy pus would show up again.

Now my dental idol, Dr. Black, had strongly urged that the free margin of the gums should never be destroyed. But I had a hunch that if I could see what I was doing, perhaps I could do a better job and stop this flow of pus. Even at that time we realized there was danger to the body from this constant ingestion and absorption of inflammatory by-products. So I played my hunch and split and everted the gum margin, scaling and polishing again.

To my great joy, suppuration was kept down for much longer intervals and sometimes did not reappear. When it did show up again, I was emboldened to take out a V-shaped section and later on in stubborn cases, removed the entire margin. This was *my* first surgical pyorrhea treatment except the clipping away of hypertrophied gum pedicles. This was about the year 1901 or 1902.

Some time after this we began to get reports and clinics from men who went much further than this, each adding something to the technique, until the present day when we have a fairly practical method in use by most progressive dentists, modified of course by our personal observations and clinical experiences.

Quite often young dentists ask me how to treat pyorrhea. I have finally concluded that the following is my best answer to that question, viz: Given a reasonable amount of brains, plus some imagination, plus the ability to observe and record observations, plus all the study and reading of the contributions of our pioneers on this subject, plus a strong back and willing hands and arms—you will unquestionably accomplish something in understanding and in treatment of periodontal disease. The end results depend entirely upon what you put into the effort.

Any dentist of ordinary intelligence who can perform a difficult extraction and make a good gold-foil filling or inlay, can if he cares to do so, render a great service for health by conscientiously trying to treat diseased gingival tissues. This is an obligation because periodontia is the foundation stone of dental health and service, without which most branches of dentistry will in time fade into insignificance.

Texas has not offered to the world anything particularly outstanding in the theory or treatment of this disease. Such men as Smith, Staples, Menzies, who studied under Gordon White at Nashville, Ratliff, who did the most beautiful instrumentation I have yet seen, Talbot, Neil, Scherer, Arnold, Krupp, and myself—were among those who were especially interested in this work. And now the younger generation headed by men like Samuel Parks and Konrad Lux are doing good and constructive work and will no doubt finally achieve something notable for our section of the country.

CONCLUSION

In the twenty or twenty-five years preceding 1900, much was spoken and written concerning the etiology and treatment of pyorrhea. Going back over these writings in later years with a better background for understanding, I am conscious of one central thought, common to most writers on the subject, that some systemic derangement was the predisposing cause of the rapidly developing and destructive type of the disease recognized by all. Diet was not strongly emphasized until about 1900 and then was not stressed as being directly or even indirectly responsible for the disease.

All the dyscrasias and diatheses pointed unmistakably toward some systemic toxaemia, some drastic imbalance in the dietary regime of the sufferer which rendered the

tissues susceptible to various local irritants known as the exciting causes. Today we often suggest that a lack of vitamins explains this obscure and mysterious condition known as "systemic toxaemia." We all know now that there are such substances as vitamins in foods and that they are essential to the well-being of the animal body. We know also that a plus or minus vitamin content may destroy the rhythm and balance of tissue and organ function, resulting in a lowered vitality or ill health.

Under the broad term of diet, we may have a reasonable explanation for one predisposing cause of periodontal disease. I believe that the prevention and control of this near scourge must be undertaken, not only by our refined technique in prophylaxis, instrumentation, and medication, but by an earnest and intensive study of dietary problems.

Much has been written in later years on the subject of diet and vitamins, but like Mark Twain's weather comment, "We don't seem to do much about it." In a general way we have learned how to feed a regiment of soldiers a balanced ration; but somehow we don't seem to do much about those who do not thrive on this food.

I believe our approach is from the wrong angle. The ultra-scientific approach is commendable, but we should not leave out of the picture our old true and tried friend Common Sense. I believe that if we used more instinct and less so-called intelligence in the selection of our food we would be healthier and happier.

For instance, instinct guides the carnivorous animals to the vital food elements in their kill and all of them go first for the blood, the vital organs, and the viscera, leaving the muscle tissue for another day when they may be unlucky in their hunting. Our intelligence, culture, education and social customs, have educated the people of today to undervalue and discard the most vitalizing portion of our animal food, to our everlasting discredit. Can you imagine a more perfect and balanced food for the omnivorous animal, Man (who is more nearly a carnivora than a herbivora), than a healthy young herbivorous animal at maturity, whose perfect organism has been built up in Nature's laboratory, from God's pure sunshine, air, vegetation, and water? All the vitamins and food elements are there in a perfect assemblage and in perfect proportions, if taken as a whole, in its entirety; not just the poorest parts by piecemeal, which custom has decreed fit for food.

Please do not ridicule this suggestion until you have seriously considered it. If the bones of this animal could be ground and prepared for human consumption and added to the other tissues to make a perfect whole, I believe that our problem of calcium and phosphorus intake would be scientifically and practically solved, and we would have less periodontoclasia.

506 N. 15th Street.

THE TWENTY-SEVENTH Annual Meeting of the American Academy of Periodontology will be held in Cleveland, Ohio, September 5, 6 and 7, 1940. Members of the American and Canadian Dental Associations are urged to attend.

RAYMOND E. JOHNSON,
Secretary

Incidents of Office Practice

Oral Manifestations of Monilia*

By W. H. SCHERER, D. D. S., F. A. C. D.
Houston, Texas

CAPTION of this case report is made with reservation. Laboratory and bacteriological findings have not been sufficiently constant to warrant a positive statement. This case is of sufficient interest to report because of its present unknown etiology, with the hope that future intensive study will reveal the etiology and suggest the treatment.

Case History:

Mrs. D., aged 36, referred by gynecologist for treatment of oral condition.

Examination of gynecologist revealed an active trichomonas vaginalis infection confirmed by laboratory tests and a probable Vincent's infection of oral cavity. All known laboratory tests have been used on this case, together with extensive use of various culture and media, none of which have revealed any evidence of fungi. Trichomonas have been found in all smears and culture growth together with definite strains of Staphylococci and Streptococci. She was subjected to several anesthetics for examination, at which time biopsies were taken and at no time have we made any definite findings. It was thought that monilia were demonstrated in one section of tissue and this was agreed to by several prominent pathologists. I, personally, am of the opinion that it is not monilia, but it is due to some infection, the source of which has not been revealed. (E. W. Bertner, M. D.)

Laboratory tests at this time revealed the presence of an extensive pelvic infection with numerous pyogenic organs present. Basal metabolism at this time was normal; Wasserman negative; blood and differential count, normal.

Patient's first visit, March 29th, 1935. Complains of soreness of the gums and inability to take any solid foods when disease is at its height. Hot foods and drinks, acids or highly seasoned foods are always painful. Cold drinks, ice cream are taken with comfort. Brushing of teeth, even with soft brush is painful, always causing hemorrhage.

Objective symptoms:

Roentgenograms, 1935, show slight loss of alveolar crests, due probably to traumatogenic occlusion. Roentgenograms today show signs of continuous eruption of teeth without further pathological changes. Bone density is about normal. Gingivitis did not have the character of Vincent's infection.

Oral cavity presents a chronic diffuse inflammation of the marginal gum tissue characterized by some desquamation of the epithelium of the papillae and more or less of the adjacent tissue.

Gingivae most frequently involved are those in the anterior regions of the maxillae and mandible. The color varies from dark red to a brilliant scarlet. Demarcation between the healthy and diseased tissue is clearly outlined. The involved areas present a polished glistening appearance. Only the buccal and labial surfaces are involved. Lingual surfaces show only a marginal gingivitis.

A similar symptom which is characteristic of chronic desquamative gingivitis is present; the sloughing of the epithelial covering, leaving a raw and painful surface. The gums where teeth have been extracted are not involved. The disease is not restricted to a special location about the gum tissue. At times it disappears more or less spontaneously in one region and appears in some other point. The gingivae are covered by a sticky mucoid deposit.

There are periods of moderate comfort followed by relapses. The cervical lymph nodes have occasionally been painful to pressure and enlarged. No odor to the breath has been observed.

Patient's mental attitude—one of optimism despite the almost constant discomfort.

*Read before the American Academy of Periodontology July 15, 1939, at Milwaukee, Wisconsin.

Treatment:

Thorough prophylactic measures were inaugurated. Peroxide and perborate sprays were used; chromic acid and peroxide, gentian violet, metaphen, acriviolet, mercurochrome have been used. These were alternated. Acid and alkaline mouthwashes have been tried. Patient has tolerated and has had more comfort with mouthwash of bicarbonate of soda than any others used.

An upper third molar has been extracted. This extraction was made during a quiescent period to avoid spreading any infection present.

Dr. E. Kortanyi, Research Professor in Dental Medicine at the Texas Dental College, was called in consultation several weeks ago. The following conclusions by him are given in the brief study he has made.

The bacteriological findings showed no difference from the oral flora in a case of stomatitis; there were bacilli, cocci, and spirillae.

Neither the clinical findings, the laboratory findings, nor the therapeutical measures confirmed the diagnosis.

This case has some similarity with a "Chronic Diffuse Desquamative Gingivitis" described in 1932 by Prinz in the *Dental Cosmos*. It is chronic; it shows marked inflammation; bleeds on the slightest touch; no local or general medication has proven of value, but we have until now no histological findings for a desquamative gingivitis as Prinz gave us, and the age of the patient at the beginning of this condition was far from the menopause. She was about 36 years of age.

A mycotic infection through a direct or indirect inoculation of the fungi by the patient from the pelvic cavity into the oral cavity has also been taken into consideration, but the bacteriological findings of the pelvic organs—except one histological section, which was lost, were negative for monilia. Neither was any monilia found in the oral cavity.

We have here a case of gingivitis that seems to have occurred always simultaneously with a vaginitis. There are probably some connections with the glands of internal secretion because thyroid tablets brought about an improvement on one occasion. Prinz also seemed to believe that in such cases there are endocrinous connections. Further bacteriological, histological, animal and clinical experiments will be carried out in the near future with the hope that they will reveal the etiology.

I hope next year to give more satisfactory findings and report better therapeutic results.

A personal communication from Dr. T. A. Hardgrove of Fond-Du-Lac, Wisconsin, who has observed a number of monilia infections, is of interest. He writes:

It is my impression that your case is a case of fungus. I do not believe it is a monilia for the reason that monilia, as a rule, attacks the connective tissue rather than the epithelium. I think your case is another division of fungus. I think you have had a Vincent's superimposed upon a fungus, probably both in the mouth and in the vagina, or a fungus superimposed upon the Vincent's. More likely, it is the Vincent's superimposed on the fungus.

I think the reason your case does not get better is because the fungus is buried beneath the first layer of tissue and it would have yielded to treatment before if you could apply a remedy that would destroy the outside surface, but in the case of the mouth and pelvic organs it is not a desirable thing to do.

The preponderance of evidence and the appearance of your pictures tells me that you are dealing with a fungus infection, and that there is no spontaneous cure for it unless it can be cured by the use of iontophoresis of copper, a method that is described in the American Medical Association Journal of April 1, 1939, by Howard W. Haggard, Maurice J. Strauss, and Leon A. Greenberg, all of New Haven, Conn.

I think your patient should be questioned as to her contact with birds for instance. There are some people who make a practice of allowing the bird to pick at the lips and face, and even in handling the bird are not careful in sterilizing their hands afterwards. Trichomonas is frequently found in contact with birds and fowl. I think, owing to the fact that trichomonas is present, frequent irrigations with bicarbonate of soda should be used and bicarbonate of soda should be administered.

You are not dealing entirely with one type of organism as the main cause of what your patient has. You have to take these three into consideration, and if you give potassium iodide, I impress upon you to give to the very limit of toleration. If I were treating her mouth, I would select the spots where the disease is most active and I would cauterize it with carbolic acid, letting it penetrate the surface epithelium, then neutralize it with alcohol. Then, when that comes off, I would paint with some of the fungicides, five per cent mercurochrome or gentian violet. I am positive that that would cure the condition in her mouth.

Inflammatory Reaction Following Treatment of Cancer of the Lip

By R. DEAN CREAMER, *Phoenix, Arizona*

Case History:

On Feb. 21, 1938, Mr. T. M. S. was referred to the pathological laboratory for treatment of a lesion on the lower lip, right side. There was an area where there had been destruction of tissue through the membrane of the lip and well into the subcutaneous tissue. The patient stated that this area had healed over but there was surrounding induration and evidence of malignant extension. It was treated on the basis of carcinoma of the lip.

Feb. 25, 1938. Patient received six skin unit doses of x-ray to the lip and one skin unit dose to the submaxillary area. Asked to report for observation in two months.

April 16-28, 1938. Patient came for observation. There was quite a severe reaction on the lip and sloughing, according to patient. At the present time this has almost entirely healed except for a very small residual area of scaliness and superficial ulceration in the center of the scar. There was some hardness but it is not certain whether this was due to scar tissue formation from old caustic treatment or whether this is some residue of malignant induration. Patient was told to have the infection about the teeth in this area cleared up by a dentist and report back after another month or two for observation. No dental treatment was given at that time.

March 20, 1939. Patient came in with the information that he believed the condition was returning on the inside of the lip. Examination by Dr. Mills and Dr. Watkins showed a small ulceration in the angle between the alveolar process and the lip. There was tenderness over this area and hardness which seemed to be in the bone structure or in the gum.

Dr. Watkins of the Pathological Laboratory said, "It seems to us that the condition present is not an extension of the malignant involvement from the lip but is an infection around the teeth." The patient was advised to have the infectious area cleared up before they could definitely decide about the malignancy. At this point the patient was referred to me for treatment March 20. According to the history the patient gave, the area of the muco-buccal fold in the lower right cuspid and bicuspid region had been irritated for some time but had become worse three weeks prior to this date and started swelling. The teeth on the lower right side all tested vital and roentgenograms of the area showed considerable alveolar absorption but no periapical involvement. The area of swelling and tenderness seemed to be definitely in the tissue of the lip below the right corner of the mouth and was very sensitive to percussion.

There was considerable inflammation of the gingivae from the lower right lateral to the first molar. It looked like Vincent's infection. A smear from the area examined by the Pathological Laboratory showed fusiform bacilli and spirochetes but not typical Vincent's organisms. This area was partly scaled and treated with Gray's Astringent, which is an iodine copper sulphate preparation. The next day, March 21st, the patient reported some relief of soreness. The teeth of the lower right side were thoroughly scaled and polished and treated with tincture of Metaphen. March 22nd the gingivae of the lower right side and the buccal tissue in the swollen area were treated with Gray's Astringent. March 23rd the swelling in the lip was reduced some and the tissues were not as sore to percussion as before. Silver nitrate was applied to the sloughing area in the muco-buccal fold in the hope of sloughing off enough tissue to establish drainage. In the afternoon the area was treated again with Gray's Astringent. This treatment always reduced the tenderness and the swelling.

April 14, 1939. The patient could not stay in town any longer so I advised him to write in a few days and report the progress. I received a letter from Mr. S. April 14th, saying the swelling had diminished gradually and was practically gone at this time. The area was still a little tender to percussion.

I believe this inflammatory reaction which occurred a year after the cancer was treated might have been prevented if the patient had had the infection of the gingivae cleared up immediately after the cancer was treated as advised by Dr. Watkins.

820 Professional Bldg.

Excessive Gingival Hypertrophy Reduced by Occlusal Adjustment

By W. Y. HAYDEN, D. D. S., *London, Canada*

Case History:

Miss T., aged 18, a working girl from another city, was referred for treatment April 10, 1937.

There was marked gingival hypertrophy, with pain and hemorrhage, about all the anterior teeth, particularly the lower left lateral, cuspid, and first bicuspid; the dark colored, enlarged gingivae enveloped fully two-thirds of the crown of each of these three teeth. The corresponding teeth on the right side were not quite so bad. There had been bleeding for three years.

The mouth was well cared for; there were no cavities; and in all there were only six fillings in the mouth.

The patient had been having periodontal treatment for two years by three different practitioners. Besides massage, various treatments had been tried, including packing with medicated paraffin, and excising of the hypertrophied tissue, but without relief from either the pain or the hypertrophy.

The teeth had apparently been well scaled as there was comparatively little subgingival calculus. The patient's health was good; she was not a mouth-breather; the diet seemed normal.

All the teeth except the four third molars were present and the alignment of the teeth, both upper and lower, was good. Centric occlusion was good and the protrusive bite fair, but in both lateral positions all the molars were completely out of contact, and the upper left second bicuspid as well. The hypertrophy was around those teeth that were taking the strain in the lateral positions. Traumatogenic occlusion seemed to be the cause of the disturbance.

The patient could come only one day in the week for treatment and the expense of transportation was also an item.

At the time of examination the left lateral occlusion was adjusted to what seemed a reasonable extent in so young a patient, and she was given instruction in massaging. She returned in two weeks, showing considerable but not sufficient improvement in that area. At this second sitting more radical grinding was resorted to and both left and right lateral occlusions were corrected. To bring the molars into normal contact in these positions, it necessitated fairly severe grinding of the incisal edges of the lower anteriors and of the lingual surfaces of the upper cuspids and laterals, and also of the buccal cusps of the three upper bicuspids involved.

I have never seen the idea advocated but I find strips of tracing linen very helpful in occlusal adjustments. The linen is cut into strips about two and a half inches in length, and in widths varying from one quarter to three quarters of an inch. The linen is stiff enough to carry to any position in the mouth, tough enough not to tear, and stands moisture fairly well. By the use of these strips you can more easily get the patient to bite in the position desired; he has something to bite on. By pulling at the strip you can tell just how close the contact is, and by using more than one strip the relative closeness of the bite between two points or more can be learned, enabling one to get a well balanced occlusion. It does not in any way take the place of articulating paper, but is used in conjunction with it.

At the conclusion of this second sitting all the molars and bicuspids were in contact in closing both to right and to left, leaving the incisors and cuspids free.

The patient returned one week later, May 1st. The gingivae were now of normal contour, though still dark in color. At this time she received a general subgingival scaling only. She did not return again for four weeks, May 29th, and I was so well satisfied then that I merely checked the occlusion and the scaling and dismissed the patient. I saw her four times.

A year and a half afterwards I received a letter from this patient. There had been no return of the hypertrophy, the bleeding or the pain. Her confidence was such that this time she wanted me to do something to stop her hair from falling out.

260 Queen's Avenue.

The Value of Clinical Observation

By HUNTER S. ALLEN, D. D. S.
Birmingham, Ala.

SOME TIME ago, Dec. 4, 1937, a patient, aged 34, female, married, no children, suffering with the upper lateral incisor, was referred to me by a rhinologist.

The lateral, having a large synthetic porcelain filling, was tested and found vital. There was no pocket formation, but the tooth was slightly mobile. The occlusion was relieved, radiograms recommended, and the patient dismissed with instruction to return the following day.

On her return the occlusion was again a factor and mobility had increased.

The radiogram revealed a rarefaction surrounding the lateral and extending to the apex of the left cuspid. The tissue surrounding the lateral was slightly inflamed.

The rhinologist was called and a report of the findings given. He remarked that the left sinus had the appearance of being cauterized and said that he had recommended the removal of the upper left first molar two or three weeks previously, to establish drainage. A Wasserman had been made and found negative. Since the condition had apparently existed for some time, he mentioned the possibility of over-medication.

The lateral was then relieved of any occlusal responsibility, but retrogression continued. As often happens when we do not understand the action of an organ, removal was recommended. Two days later similar trouble was had with the cuspid. This was removed without my advice. Five days later she called and requested that I see her immediately upon arriving at the office, as she had been selected to give a blood transfusion to her sister who had been injured in an accident.

In examining the socket, the interdental osseous structure, mesial to the first bicuspid, was loose. This was removed and from the appearance it had sequestrated to the apex of the bicuspid.

To avoid having the patient know that I suspected trouble, I gave her an ultraviolet light to hold in her hand, while I contacted her physician, relating the case to him, and suggested that some one else be used for the transfusion.

The patient was now referred back to her rhinologist, who made a second Wasserman test which was 4 plus.

To me this case was most interesting and helpful, for it emphasized the importance of using mechanical and other tests to verify our clinical findings, instead of relying on them exclusively, in making a diagnosis.

The Conservative Treatment Procedure of The Complex Pocket

By OSCAR BJORNDAHL, *Saint Paul, Minnesota*

WHEN TREATING a case of periodontoclasia, where there may be one or more teeth with a complex pocket, I make no attempt to curette these deeper pockets until the simpler ones have been finished. While completing the diagnostic chart the etiological factors for these pockets have been determined. The primary cause of a typical complex pocket, also known as the vertical type, is often trauma.

If trauma is the etiological factor, it is corrected and while caring for the rest of the mouth, these teeth are superficially scaled, but no attempt is made to reach the base of the pocket at this time. The purpose in so doing, is that while curetting the other teeth enough time has elapsed, so that if a tooth with a complex pocket was mobile and the trauma has been corrected, the tooth should again be firm. Also, if any clinical signs were manifested in the gingival tissue, they should show definite signs of improvement from the benefits of proper massage, in which the patient has been instructed. By waiting for these clinical symptoms to disappear I am only assuring myself, before doing the pocket surgery, that my diagnosis was correct.

The aim of the conservative method of treatment of these pockets, as we all know, is for reattachment of the tissue to the root surface. It is, therefore, of the most importance that we place the tooth and

surrounding tissues in as favorable a condition as possible. We cannot expect tissues that are being traumatized, or with lowered resistance, to be capable of rebuilding and repair. Nor are they likely to supply the blood that will readily clot and organize. Likewise, we cannot expect the clot to attach itself to a tooth that is still mobile. Whereas, the pericemental tissues that have been relieved of the trauma or overstress, readily repair and return to normal structure and function. The gingival tissues, due to massage, become firmer and the pocket is mechanically reduced in size. This firmer tissue and smaller pocket is now better able to retain and protect the clot after it is once established. Unless these favorable factors can be obtained, I have concluded that there will be little value in establishing the clot.

Briefly the procedure is as follows:

1st—Remove etiological factors and do superficial scaling.

2nd—Instruct patient in personal home care and wait for the disappearance of clinical symptoms.

3rd—Application of sodium sulphide solution. I apply the sulphide solution before the final curettage to make as certain as possible, that instrumentation and hemorrhage will remove all traces of the solution. I am of the opinion that if any of the solution remains it will interfere with the proper organizing of the blood clot. I have experienced no contra-indication for its use and feel it is of material help in removing the epithelial lining.

4th—Curette cementum and epithelium.

5th—Establish and seal in blood clot.

I am not unmindful of the controversies as to whether there is histologically an actual reattachment of the tissue to the cementum, also, as to the benefits of using sodium sulphide solution, and as to the importance of the blood clot. I have neither the ability nor knowledge to enter into this controversy. This I do know, however, that if the clinical symptoms can be treated and the pocket surgery carefully done, that many periodontal pockets can be obliterated by these conservative measures.

As a general practitioner, I wish to acknowledge that what I have said in these few minutes, is my interpretation and clinical application of the knowledge I have received from other men who advocate this method of treatment.

Periodontoclasia

By T. E. BRALY, D. D. S.
Chattanooga, Tennessee

CASE REPORT:

Mrs. N. M., aged 33, came to our office February 23, 1933, complaining of itching pain around several teeth, especially in the upper right molar region.

Full mouth x-rays were made the same day, and treatment was begun.

The patient, whose weight was only 100 pounds, was very nervous, poor color, and gave the appearance of being in a generally run-down condition. Much pus was present in numerous pockets around the teeth.

The patient had been living in a small town for years. Her dentist, to whom she had gone regularly, was a high class gentleman, slightly past middle age. This dentist has few superiors as a gold worker, but he overlooked the most important part in this case, the foundation structure of the patient's teeth, for he owned no x-ray machine and did not suggest the advisability of x-rays.

A thorough prophylaxis was given at two sittings. Two weeks later, and at two week intervals thereafter, one quarter of the mouth at a time was anesthetized with novacaine. Sub-gingival curettage was used where pockets were not deep but where they were deep, the unattached unhealthy tissue was removed, the area curetted, and a surgical dressing used to cover area where soft tissue was cut away.

The lower third molars were removed. They extruded, and had no opposing occlusion. Conservative occlusal grinding was done where necessary. In due time the patient improved much in health. The pa-

tient, now six and one-third years later, weighs 117½ pounds, and is still enjoying good health and comfortable teeth.

While I realize that there is much need, especially in cities, for the specialist in periodontia, I also realize that what many general practitioners of dentistry in towns both large and small need to do is to remove the dust on their x-ray machines and use them, brush up on their knowledge of periodontia, and begin giving patients the service they are entitled to. If the dentist does not like periodontia or does not do it, he should be honest with himself and patients and send them to someone who can give the required services.

The main object of this short report is to try to stimulate and encourage the general practitioner of dentistry to become foundation-minded.

"What Is the A. D. A. Doing For Me?"

By ARTHUR H. MERRITT, *New York City*

THIS is a question I sometimes hear asked, and always with the implication that the questioner feels he is not receiving an adequate return for the $4.00 which represent his annual dues to the Association.

Inasmuch as the rank and file of our members are not in regular attendance at the annual meetings of the A. D. A., and, in consequence, have only a hazy idea of the multitude of ways in which it serves the profession, this is, perhaps, a natural question and one which deserves an informative answer. . . . .

It is impossible in a brief space, to enumerate all the activities in which it is engaged or give an adequate idea of the time and labor given to it by the officers and committees —often at no little sacrifice to themselves and always in the interest of the profession.

Among these activities, and one of first importance, is the Bureau of Public Relations. This is ably conducted by Dr. Lon Morrey, whose duty it is (among other things) to educate the public in all matters pertaining to dental health, with benefit to both the public and the profession. . . . .

There is also a Research Commission under the auspices of the A. D. A. working with the Bureau of Standards in Washington, year in and year out studying materials used in the practice of dentistry. . . . (See Journal for July, 1939, page 1197, for a list of certified materials.)

The Council on Dental Therapeutics is another all year round group made up of dentists, physicians and chemists which examines and passes upon the reliability of all drugs, anesthetics, dentifrices, mouth washes and the like, used or prescribed by the dental profession. In addition to reporting its findings in the Journal, it publishes each year, at a nominal cost, a small volume of *Accepted Dental Remedies*. . . . .

In addition to these activities, which of themselves repay one over and over again for the small amount expended for dues, it maintains a Committee on Legislation which keeps in touch with the legislative activities of the Federal government and the 48 States, with a view to preventing the enactment of unwise dental laws; an Economics Committee, representing the 13 Trustee districts of the country; a National Health Program Committee, which acts as the contact committee between the profession and the Federal government—a committee that has rendered, and is rendering, invaluable service in cooperating with the government in matters of public health. And there are other agencies such as the Insurance Committee, the Library Bureau, the Relief Commission—all maintained in the interest of the profession and the public at a cost to the membership of about six cents each.

And lastly there is the Journal—the largest and most influential dental journal in the world, having a circulation of more than 50,000 copies a month. It finds its way into 82 foreign countries and is read wherever dentistry is practiced. A subscription to the Journal is included in the $4.00 dues.

This is only a partial list of the things which the A. D. A. is doing for the profession and of which every member is a direct beneficiary. . . . .

—Extracts from President Merritt's Monthly Message—January, 1940.

Editorials

The Responsibilities of Membership

WE ARE hearing much these days about the responsibilities of citizenship and it would be impossible, indeed, to overemphasize so important a subject. In these uncertain times, it is one of the greatest privileges of life to live in a free country. We must guard this privilege well by using our freedom for constructive purposes. All privileges imply corresponding responsibilities. This fact is often forgotten when we apply for membership in an organization.

We usually join a club, a church, or a dental society for selfish reasons, since we believe that membership in these bodies will benefit us socially, professionally, or materially. It is seldom, however, that anyone joins the Red Cross for selfish reasons, and may it not be that this fact, to some extent at least, explains the continued growth and success of this great humanitarian organization?

Until we have earned the privilege of membership by faithfully serving, over a period of time, the organization of which we are a part, unselfishly and loyally, we cannot begin to receive the full benefits of our membership. In other words, until we accept our share of the responsibilities inevitably connected with any organized group, in this way changing our attitude from a selfish to an unselfish one, we will not have cancelled our indebtedness for the privilege of membership, nor have gained much satisfaction from it.

If we can but imagine the unselfish motives that inspired the pioneers who organized the first dental society and can appreciate the self-sacrifice and devotion that insured the success of their venture, we should be inclined to emulate their unselfishness through service in the dental societies where we have membership.

Until a dental society consists of members who for the most part have changed their habit of thinking from "What can I get out of my membership?" to "What can I give for my membership?" it cannot progress to the extent of its possibilities. Membership in dental societies is a privilege and implies responsibilities.

The Standardization of Dental Hygiene

We judge the various dental services rendered by dentists by certain generally accepted standards. A gold inlay, for example, to meet the standards of good dentistry for this type of restoration, must restore tooth form, contact point, and occlusal relationships; the margins must fit perfectly; the tooth pulp must be carefully protected under the inlay from thermal shock. This standard for gold inlays together with other minor requirements are familiar to dentists and generally accepted by them.

There is, however, no recognized standard by which to judge dental hygiene and as a consequence there is much confusion in the minds of dentists as to its value. There are those who claim that it is worthless as a preventive measure in dental caries. On the other hand there is too much evidence on record in favor of dental hygiene as a means for preventing much dental caries and periodontal disease as well, for us to be willing to discard or to discredit so effective an agency

for the control of oral health. This difference of opinion would be much less if we had standards for judging dental hygiene. Until these are accurately defined and established any opinions tending to discredit its usefulness should not be taken too seriously.

A mouth judged by one dentist to be clean and healthy, would by another be found to be most unhygienic with serious disease involvement. We need standards for a healthy mouth. Instructions in the home care of the mouth should also be standardized. Much attention is paid to brushing the teeth regularly, but comparatively little care is given the interproximal spaces and the gingival third of the exposed tooth surfaces, which we all agree are the areas where most of our dental and periodontal disease begins.

A state of health must be established in the mouth before the personal home care of the patient can be effective. Even then careless or indifferent efforts by the patient will prove ineffectual as a means of maintaining health or preventing dental disease. Food particles in any stage of disintegration lodged in the interproximal spaces are not conducive to health in the mouth nor is a mouth clean where such conditions continually exist. Bacterial growth and debris on the teeth prepare the way for gingivitis and dental caries.

A fair test of the value of dental hygiene as a preventative of dental caries should be made with as much scientific accuracy as is used for evaluating other possible preventive factors. Studies should be made in mouths which have met carefully defined standards of health and cleanliness and the home care procedures should be standardized.

No one doubts that the etiology of dental caries is most complex and we are agreed that bacteria play an important part in its development. It is, therefore, not inconsistent to believe that mechanical measures for reducing their numbers, frequently disturbing their positions and attachments, diluting their end-products, and producing an environment discouraging to their growth are important aids in lessening the incidence of dental caries.

We are convinced that the continued hygienic control of the environment of the teeth is important and that a true evaluation of all of its benefits can be made only when uniform and clearly defined standards of health and cleanliness in the mouth have been established and generally accepted.

—*G. R. S.*

Open Meetings

On the next two pages of this Journal will be seen the Program for the next annual meeting of the American Academy of Periodontology. The sessions will be open to members of the American and Canadian Dental Associations. Attendance at this meeting as well as at the Periodontia Section of the A. D. A. is urged for everyone who is at all interested in the supporting structures of the teeth.

On account of the close relationship existing between the teeth and the periodontal tissues, these meetings are of concern to all dentists and are worth considerable effort to attend. The programs are well arranged to offer a satisfactory balance of the scientific and the practical.

Twenty-Seventh Annual Meeting

AMERICAN ACADEMY OF PERIODONTOLOGY

CLEVELAND, OHIO, SEPTEMBER 5-6-7, 1940

THURSDAY

Morning

9:00
Registration
9:30
First Session of the Twenty-Seventh Annual Meeting.
Thomas B. Hartzell, President
REPORTS OF OFFICERS AND COMMITTEES:
Secretary-Treasurer. Raymond E. Johnson.
Committee on Program. Willa Yeretsky.
Committee on Clinics. Konrad Lux.
Committee on General Arrangements. C. Wesley Marriott.
Committee on Scientific Investigation. Hermann Becks.
Committee on Nomenclature. Harry Lyons.
Committee on Publication. Harold J. Leonard.
Committee on Ethics. T. E. Braly.
Committee on Credentials. W. A. Beatty.
Special Committee Reports by: Edward L. Ball, Leo F. Marre, Harold J. Leonard, Carlos H. Schott, Samuel R. Parks, Celia Rich, Juanita Wade, Harry Lyons, Grace Rogers Spalding, M. Monte Bettman, and Clayton H. Gracey.
10:45
Memorial Tribute to Dr. Rudolf Kronfeld. Edgar D. Coolidge.
Presidential Address. Thomas B. Hartzell.

Afternoon

2:00
Histopathology of pyorrhea and results obtained by various methods of treatment. Lieutenant-Colonel James B. Mann, Dental Corps, U. S. A., *Washington, D. C.*
Some aspects of the study of nutrition in southern California with especial reference to the work of Francis M. Pottenger, Jr., M. D. Allison G. James, *Los Angeles, California.*
Some aspects of the effect of the thyroid secretion on the dental structures. Daniel E. Ziskin, *Columbia University, New York City.*
Some mechanical factors in relation to tooth form and bone support as a basis for occlusal adjustment. M. Llewelyn Drake, *Cleveland, Ohio.*

FRIDAY

Morning

8:00
Past-presidents' breakfast.
9:00
Report of past-presidents' meeting. Grace Rogers Spalding, *Chairman.*
9:15
Preservation of the periodontal tissues by means of correct partial denture design. Edward B. Spalding, *Birmingham, Michigan.*
Committee on scientific investigation. Hermann Becks, *Chairman.*
10:15
The physiology of the dental supporting structures. Isaac Schour, *Chicago, Illinois.*
11:15
Healing process after gum resection. Balint Orban, *Chicago, Illinois.*

Afternoon

12:30
Luncheon—Academy Round Table.
Edward L. Ball and C. J. Caraballo, *Co-Chairmen.*

1. Salivary calculus. Frank L. Adams, *Leader.*
2. Value of fixed bridgework in periodontia. Stanley C. Baker, *Leader.*
3. Periodontia in the general practitioner's office. Clarke E. Chamberlain, *Leader.*
4. Instruments used in subgingival curettage. Walter Leabo, *Leader.*
5. Stomatitis. Virgil Loeb, *Leader.*
6. The patient's periodontal coöperation. R. Holmes Mason, *Leader.*
7. The relation of periodontoclasia to systemic disease. John G. Meisser, *Leader.*
8. Advantages of periodontia study groups. E. Romle Romine, *Leader.*
9. What can the tooth brush accomplish in the child's mouth? Carlos H. Schott, *Leader.*
10. Mouth lesions associated with vitamin B_2 (Riboflavin) deficiency. James A. Sinclair, *Leader.*
11. The systemic aspect of periodontal disease. Rowe Smith, *Leader.*

12. Ladies' group.
Mrs. Thomas B. Hartzell, *Presiding.*
Mrs. Clyde C. Sherwood, *Reporting*—Why women leave home and go to dental meetings.

2:30

Clinics. Konrad Lux, *Chairman.*

Misleading roentgenologic evidence in searching for dental foci. Russell A. Sand, *Fargo, North Dakota.*

Technic of treating pyorrhea without surgery or curettage. James A. Sinclair, *Asheville, North Carolina.*

Histology of treated pyorrhea cases; Loan sets and atlas from registry of dental and oral pathology. Lt. Col. James B. Mann, *Washington, D. C.*

Pregnancy gingivitis. Daniel E. Ziskin, *New York City.*

Parodontosis (diffuse atrophy). Henry M. Goldman, *Boston, Massachusetts.*

The use of the haemostat and cotton rolls in the post-operative treatment of periodontoclasia. Thomas B. Hartzell, *Minneapolis, Minnesota.*

A universal principle for partial denture design. Edward B. Spalding, *Birmingham, Michigan.*

7:30

Annual banquet and dinner dance—Ball Room.

SATURDAY

Morning

9:15

Case reports.

Diffuse fibromatosis of the gingivae, preoperative, surgical and post-operative procedures. Edward L. Ball, *Cincinnati, Ohio.* Discussed by Balint Orban, *Chicago, Illinois.*

Temporo-mandibular dysarthrosis. Helen Hayes Harmon, *Grand Rapids, Michigan.*

An unusual case of periodontal disease in the adolescent period. Edgar D. Coolidge, *Chicago, Illinois.*

Case report. William M. Gardner, *Cleveland, Ohio.*

10:30

Light from primitive races on modern degeneration, physical, mental and moral. Weston A. Price, *Cleveland, Ohio.*

11:30

Election.

Afternoon

12:30

Luncheon meeting of the new council.

4:00-6:00

Informal tea for members and guests.

American Academy of Periodontology

1939-40

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Academy Round Table—Edward L. Ball and C. J. Caraballo, Co-Chairmen.
Entertainment—Leo F. Marre, Chairman, Justin D. Towner.

**Succeeding Rudolf Kronfeld—Deceased.*

ABSTRACTS AND EXTRACTS OF CURRENT DENTAL LITERATURE FOR 1938 (Continued from 10(2) July, 1939)

(f) Treatment

(Continued from 9(2):109. July, 1938)

473—Adler, E.: **Erfahrungen über die Paradentose und ihre Therapie.** Experiences in paradentosis and its therapy. *D. Z. W.* **38**:898. 1938.

General therapy of paradentosis consists of the following:

1. Elimination of injurious factors: excess mineral content in water, toxication through faulty nutrition, poor respiration.
2. Administration of substances which the body needs for its normal metabolism: easily assimilated mineral salts and vitamins, through raw food.
3. Supplying additional foods such as: orange juice in greater quantity when it is normally scarce during two or three months of the year.
4. Reinforcement of therapy: hormone treatment, blood treatment, medication of the autonomic nervous system at the beginning of treatment, when indicated.

Local therapy: removal of any coatings on the teeth, cleansing of the gum margins; removal of over-growth of papillae with heat treatment, eventually quartz-ray treatment; advising the patient of the importance of oral hygiene.

—*M. B.*

474—Albanese, P.: **Paradentose.** Paradentosis. *D. Z. W.* **51**. 1938. (Originally in *Revista Italiana di Stomatolog.* **5**. 1938).

The author in this article considers gingivitis simple, hypertrophicans, ulceromembranacea, and those clinical entities grouped under the name of alveolar pyorrhea, as toxic-infectious and allergic diseases. He believes that the best therapeutic results are secured through immunization by way of the skin. In the first place, a skin irritation is set up through an organic mineral substance, and in this skin region, there is injected, the next day, an autovaccine from the pus in the gingival pockets. Clinical observations are favorable, local and general reactions occurring. In several patients, a light fever was observed. The resulting immunity and improvement of the local condition should last approximately one year.

—*M. B.*

475—Ankersen, W.: **Zur Paradentosebehandlung Sozialversicherter.** Paradentosis therapy of social assurance. *Z. Rund.* **39**:1605. 1938.

It is not within the scope of paradentosis therapy to expect restoration of a dentition nearly destroyed by paradentosis in its final stage; nor should every paradentosis case be handled unconditionally. It is more important and desirable to treat those cases which are promising and to apply to these a basic, systematic course of therapy. Early treatment and general paradentosis prophylaxis require entirely separate consideration.

In the case of a vitamin C deficiency, Vitamin C therapy is implicitly demanded, with Cebion, for instance, in the form of tablets and of injections, in addition to massage with Cebion paste. On account of insufficient knowledge, limited success in paradentosis therapy is casually laid to the mode of treatment. Generally patients must be educated to promote prevention of paradental diseases by observation of their gums. Bleeding gums, spongy and loosened, all the way to inflammation of the gums, an actual early symptom of paradentosis, which the patient can see for himself, should cause him to visit his dentist immediately, to prevent further paradental damage.

—*M. B.*

476—Aykroyd, W. R. and Krishnan, G. G.: **Treatment of stomatitis caused by diet deficiency.** *Indian J. M. Res.* Calcutta. Jan. 1938. From abstr. in *J. A. M. A.* **110**(18):1525. Apr. 30, 1938.

In a small group of young boys on a very deficient diet who were suffering from stomatitis, the authors found that the addition of 1 to 3 eggs to the daily diet overcame the condition. Where alkalin yeast, autoclaved and subsequently neutralized, was given to another malnourished group the improvement was immediate and unquestionable. In another small group soy beans was added to the deficient diets without any benefit resulting.

—*C. R.*

477—Barrieu, C.: Die Paradentose vom Gesichtpunkt der Humoraltheorie. Paradentosis from the standpoint of the humoral theory. *Z. Rund.* **14.** 1939. (Originally in *L'Information Dentaire.* 22. 1938).

The author describes a therapeutic method which he believes achieves a final cure of paradentosis. He holds it necessary to insure the viewpoint of an absolute cure at the outset, to use, at one and the same time, all means of blood study. It is essential that all patients be subjected to studies in the clinic and laboratory. External diseases usually clear up when general disorders are corrected. Parallel with this general therapy, there must be local treatment along two lines: surgery and medication. Surgery consists in a basic curettage of the teeth and alveoli, which must be deep and thorough. This operation has a double purpose in that it clears away calculus and granulation, and stimulates the formation of sound tissue. To prevent a relapse and reproliferation, the author has found gold in the form of a salt to be a safe and sure means; calcium gold salt can now be obtained easily and is effective in preventing any relapse. Its effect lies in its bactericidal action, its favorable action on the cells, and its absolute harmlessness.

—*M. B.*

478—Boenheim, Felix, M. D.: Endocrine therapy of parodontosis. *J. D. Res.* **17(2):107-13.** April, 1938.

According to the author's knowledge no parodontosis has ever been cured by internal treatment alone. Any chronic or systemic anomaly present in parodontosis is treated to improve all conditions and the resistance of the tissues to relapse.

The author's views are based on about 500 cases which he has treated internally coöperating with dentists who treated the condition locally.

A number of case histories are cited to show the benefit derived from proper endocrine therapy where required. The elimination of autotoxins from the intestinal tract is important in treating parodontosis. In 60 per cent of all cases these toxins may be traced to faulty diet.

For six months a preparation—"Heptogene"—containing iron, copper, liver, vitamin B and calcium was used in all parodontotic cases with satisfactory results. It is important that physicians coöperate with dentists in the treatment of parodontosis.

—*G. R. S.*

479—Brenes-Espinach, F.: A comparison of the results of the flap operation and gingivectomy in pocket elimination. Abstract *Northwest. Univ. Bul.* **39:** 18. Dec., 1938.

A comparative study of the two main types of surgical treatment, namely, the modified flap operation (Kirkland) and gingivectomy (G. V. Black), recommended for the elimination of peridental pockets, was undertaken for the purpose of endeavoring to determine their relative value. The results of these two operations were based upon the following manifestations: elimination of clinical observable inflammation; subsequent tightening of teeth; and reduction in the depth of the peridental pocket. An endeavor was made also to determine the amount of shrinkage which occurred in the gingival tissues following treatment, as well as the amount of reattachment or detachment of the peridental membrane. Since much of the literature on the subject implies that the flap operation is the most conservative, it was considered wise to examine also the final aesthetic results, and determine the duration of pain, if any, and the time of healing. . . . .

Gingivectomy was performed on fifteen patients, in whom eighteen regions, i.e., anterior and posterior areas, were operated upon, with a total of forty-six teeth involved. The modified flap operation was carried out on seventeen patients, involving eighteen regions and forty-seven teeth.

The pockets operated on averaged three millimeters in depth following the preliminary prophylaxis treatment.

Both types of operation and their subsequent treatment were carried out as recommended by their respective originators.

This study seemed to indicate that, essentially, the results were the same for both operations. At the end of a six-week healing period no distinction could be made between methods. A similar degree of pain seemed to occur in both types. Gingival recession and the depth of crevice in the healed condition were about equal. No reattachment of detached peridental tissue apparently occurred in either operation. The greatest difference seemed to lie in the time of healing in comparable areas. The flap operation required about twenty-two days as against twelve or thirteen in gingivectomy. The latter operation required less time for its completion and less after treatment. —*Extract from Abstract.*

480—Breuer, K.: **Mit der Prophylaxe der Erkrankungen des Paradentiums.** Prevention of diseases of the paradentium. *Z. Rund.* 2:96. 1938. (Originally appeared in *Zeit. Ceskoslovenska Stomat.* 11. 1937).

Breuer encourages the use of a diet rich in vitamins A, C, and D, and in calcium for pregnant women; breast-feeding of babies where possible, since it produces a greater jaw functioning than bottle-feeding. Precautions should be taken against rickets and bad habits of children which put a strain on the jaws should be corrected.

Children should be taught to chew slowly and in a grinding manner. Nightly toothgnashing is to be encouraged, rather than opposed, since it produces an increase in jaw functioning and development, which strengthens the paradentium. Measures should be taken to produce normal occlusion, articulation, contact relations, and correct bite. Causes for anomalies of arrangement are to be looked for and regulated, in deciduous teeth; if, at the end of functional period of deciduous teeth, no occlusal contact exists, it must be supplied. In all cases in which no physiological abrasion has occurred, the mesial displacement of the mandible must be freed by grinding, this being of as much importance in the deciduous teeth as in the permanent dentition. Normal anatomical, and especially normal functional, relationship in paradentium and in dentition are important, for with optimal jaw-function relations, internal disturbances (raising of blood sugar, pregnancy, etc.) do not lead to the development of paradentosis.

—*M. B.*

481—Breuer, K.: **Richtlinien der Therapie der Erkrankungen des Paradentiums.** Correct lines of therapy of disorders of the paradentium. *Paradentium.* 5:113. 1938.

Contrary to certain opinions, especially of the Wiener school, internal treatment is not as desirable in dystrophic as in inflammatory paradentosis, where internal disturbances result in most cases in inflammatory changes. With the help of internal therapy, this inflammatory change is acted upon first. Internal therapy alone suffices in the treatment of paradentitis, but by no means for paradentoses, since functional malconditions of the teeth are not affected by internal treatment. The goal of local therapy is systematic inner articulation of all teeth, and not, as is generally contended, the outer articulation of the dentition.

A detailed report is given of 150 5-7 year old children, amongst whom not a single case of inflammatory changes of the paradentium was found; also, of 37 women patients who had gingivitis of pregnancy but no changes in the sense of dystrophia diffusa.

In young intact dentition, there is no reason to attempt to prevent the grinding of teeth; by no means should this practice be discouraged, but care should be taken that this physiological precedent develops normal permanent dentition.

The assurance of successful orthodontic treatment requires that measures be taken to secure optimal jaw functioning in the placement of appliances.

Vitamin C determination with the help of dichlorphenol-indophenol is inaccurate and therefore of doubtful value. Reference is made to the quantitative determination of ascorbic acid in serum by the method of Lund and Lieck.

—*M. B.*

482—Brodsky, Ralph Howard, D. M. D.: **The Bucky (Grenz) ray in the treatment of oral tuberculous lesions and periodontoclasia.** *J. D. Res.* **17(5):** 381-86. Oct., 1938.

A carefully written description of the action and qualifications of the Bucky-Grenz ray apparatus, especially as related to its possible function in the mouth in the treatment of tuberculous lesions involving the mucous membrane, and periodontoclasias.

A group of fifty adult patients with both horizontal and vertical types of periodontoclasia were treated with Grenz rays. Some of these patients received subgingival curretage in addition. Regardless of methods there was definite evidence of a curative effect from the Grenz radiations.

—*G. R. S.*

483—Castenfeldt, T.: **Vitamin B_1 und Paradentose.** Vitamin B_1 and paradentosis *D. Z. W.* **51**:1214. 1938. (Originally in *Odentologisk Tidskrift.* 2. 1938).

We can draw from case histories that vitamin C was first prescribed without result in cases of inflammatory paradentosis of vague origin. In the course of medical treatment (for infection of the lungs, light cases of myocarditis), vitamin B was prescribed; there resulted an improvement in

the paradentosis condition, which occurred during the administration of vitamin B. While a combination of vitamins A and B in treatment caused an aggravation of the paradental condition, treatment with vitamin B_1 resulted in a definite improvement.

—*M. B.*

484—Correns, A. E.: **Der Vitamin-C-Gehalt der Frauen—und Kuhmilch.** The vitamin C content of mother's and cow's milk. *D. Z. W.* **42**. Oct. 21, 1938. (Originally appeared in *Klin. Wschr.* **3**. 1937).

The vitamin C content of mother's milk during the summer months is considerably greater than in the rest of the year, so that nourishment in summer contains a greater quantity of vitamin C for babies. The vitamin C content of cow's milk does not suffice throughout the whole year for the need of babies. The author makes the observation that with the lowering of the vitamin C level in mother's milk (under 2.5 mg.%) there is a necessity for an increase in the use of a diet rich in that vitamin, or for a synthetic vitamin C.

—*M. B.*

485—Demoulin, P.: **Résultats favorables obtenus par l'emploi de la vitamine C dans la thérapeutique des gingivites marginales.** Favorable results obtained in the use of vitamin C therapy for marginal gingivitis. *Rev. Belge de Stom.* **2**:164. 1938.

The state of deficiency of vitamin C, shown in erythematic and hemorrhagic gingivitis, is now well known in its relationship to the paradentium; and its treatment with ascorbic acid is specific and practical. In addition to total lack of vitamin C, there are conditions of pre-deficiency which are quite common, appearing as symptoms that are not as specific: chlorotic anemia, lack of appetite, and digestive disorders. A method of detection of such conditions has not yet been perfected, although that of Tillman (using dichlorphenol-indophenol) is of some value.

While the exact state of deficiency cannot be ascertained, there is no need to fear the production of a hypervitaminosis by giving vitamin C; in cases where any vitamin C deficiency is suspected, 4-6 tablets of 50 mgms. ascorbic acid per day should be prescribed. In cases of severe deficiency, intravenous or subcutaneous injections should be used.

For all his patients with gingival disorders, Dr. Demoulin prescribed 30 cgms. per day for ten days, which was then reduced to 10 cgms. for the remainder of three weeks. He also recommended the juice of fresh fruit, especially citrus, and ordered abstinence from aspirin (which destroys vitamin C). In all his cases he has had excellent results with this therapy.

—*M. B.*

486—Dobler, A.: **Paradentose-Therapie mit Sarizol, Sarizol/Kurzwellen, und Alveoaktiv.** Treatment of paradentosis with Sarizol, Sarizol together with short waves, and Alveoactive. *Schw. Mschr. f. Zahnheilk.* **6**:541-573. 1938.

Sarizol is a recinoleate of sodium; even in high concentrations it acts on bacteria without attacking the tissues. It lowers the superficial cellular tension and thus penetrates the smallest mucosal interstices. It is not a bactericide, but it detoxifies microbic toxins. Results after three months were good, better than those with Alveoactive.

Sarizol with short waves. Use waves of 14-15m. (not to be confused with diathermie), where tissues do not have necessary resistance; the bone substance is also benefited. It gives a lasting warm sensation, improved circulation, increase in phagocytic forces, and decrease in microbic virulence. The results, however, are not superior to those from the use of Sarizol alone. Short waves are to be considered as accessory only.

Alveoactive. Using body synthesis to complete local treatment; application in three forms:

1. Hormone composite — excitation of hormone and cellular activity.
2. Ampules for injection, of silicic acid (activated), hormones of dentary and maxillary germs . . .
3. Paste for massage, of activated silicic acid and sulfur.

Results were inferior to both above methods, and suppuration persisted.

Sarizol leads, in all cases, to a clinical healing, and stops bone dissolution.

—*M. B.*

487—Döfke, W.: **Über ein neues Mittel zur Paradentose-Behandlung.** A new method of paradentosis therapy. *Z. Rund.* **40**:1713. 1938.

Dr. Döfke has handled cases of paradentosis partly with calcium injections, and partly with Cebion injections intravenous-

ly, and some with both. He does not place any great value on local treatment of diseased gums, since he obtained scarcely any benefit from brushing in gingivitis. He has always obtained best results with intravenous calcium-Cebion injections.

With each patient, a blood test was made at the beginning of treatment; they showed a relative increase of lymphocytes and monocytes, in severe cases a slight shifting to the left. The author states that in all cases obvious success can be attained with Cebion paste; improvement of the blood picture always results, and locally a quick healing of the gum affection.

The patients said that they used the paste willingly because of its pleasant taste, and they themselves reported an obvious improvement. Dr. Döfke affirms the value of Cebion paste, and although it is no cure-all, it is of definite therapeutic value.

—*M. B.*

488—Elbrecht, A.: **Die partielle Prothese und die Paradentose.** Partial denture prosthesis and paradentosis. *Paradentium.* **9**:209. 1938.

A partial denture is to be considered not only as a restoration but also as a curative measure in the treatment of paradentosis, since it acts as a balancing force to the defective forces of the rest of the dentition.

Partial dentures must be constructed with consideration for the occlusion and with complete knowledge of the clinical and roentgenological findings. It is important in paradentosis to reëstablish continuity in the dental arch which has been broken; however, the partial denture supported on the oral mucosa alone should be made only when no other possible means of support exists. The alveolar process should never be burdened for the benefit of the paradentium, but rather excessive and unfavorable irritants should be kept away from it.

Dr. Elbrecht describes various technical details and precautions in the construction of partial dentures for paradentosis cases. Preceded by proper diagnosis, the denture becomes a means for the treatment and cure of paradentosis; and here, as in all other measures, the full coöperation of the patient is necessary for the best results.

—*M. B.*

489—Fuchs, H.: **Die Umstimmung bei der Paradentose.** Change of condition in paradentosis. *Z. Rund.* **45**: 1936.

The basic cause of paradentosis is insufficiency of internal secretory action, in which the organism has lost the ability to assimilate the necessary vitamins and minerals. Vitamin deficiency can now be corrected by administration of synthetic products, but this will no more cure the condition than insulin will cure diabetes. On the other hand, local therapy alone will not cure paradentosis. According to the experience and the opinion of the author, a thorough cure can only be attained through treatment according to the rules of health.

Dr. Fuchs' course of treatment is as follows: as preparation, four days of liquid diet; early morning exercise; then tooth brush massage and tub bath; then vegetable meal rich in raw food, supplementing the meal with tea spices, bicarbonate of soda, etc. Local treatment of gums and gingival pockets follows; then administration of vitamin C. The latter deficiency is soon corrected, and is followed by the proper level through the organism itself. The general symptoms of hypovitaminosis (languor and inability to do work) soon disappear; the gingival pockets heal, the teeth become firm, provided they had not been loosened too much. Rebuilding of the alveolar bone should not be expected; the cure of the paradentosis, and firmer teeth must be the aim of therapy.

—*M. B.*

490—Häupl, Prof. Dr. K.: **Die Funktions-Kieferorthopädie in Dienste der Vorbeugung paradentaler, Erkrankungen.** Orthopedics of the jaw as a means of treatment of paradental diseases. *D. Z. W.* **48.** Dec. 2, 1938.

Chrohic inflammation of the gums is one paradental disease whose treatment with methods of orthopedics of the jaw is possible; under the influence of this disease, there is alteration of bone in almost all cases, and removal of paradental bony tissue is ultimately necessary. Another paradental disease which can be helped with orthopedic treatment is the condition of loosening of the teeth. (Discussion of the types, etiology, and histology of this disease is then given.)

Orthopedic treatment consists in restoration of a well-formed dental arch, and the best occlusion possible; this can be accomplished with his method, the author says, with a great degree of success. The apparatus is a plate, which, with the help of wings and other appliances, is used on all teeth whose position needs to be changed;

it serves merely for muscular stimulation. A description of the theory and mechanical basis of this method is then given. There are histological studies by the author included for proof.

The advantages of this method are then discussed: good tissue reconstruction along physiological paths without harm to tissues; at the conclusion of treatment there is an increase in efficiency of the teeth due to increase in functional use.

—*M. B.*

491—Heisler, A.: **Über die therapeutische Verwendung von Kaffeekohle.** On the therapeutic application of coffee-charcoal. *Z. Rund.* **9**:382. 1938. (Originally appeared in *Hippokrates.* **3**. 1938).

In a large work which appeared at the end of 1937 in *Hippokrates,* Dr. Heisler discussed the application of coffee-charcoal which has been used for inflammatory conditions of the gums. Its effect depends on three factors; absorbing power of charcoal, disinfecting power of the phenol which is set free in carbonization, and the effect of various vitamins contained in it.

Because of many questions which have been asked about the work, Dr. Heisler has continued his research with carbonization of coffee beans; in carbonization, it must be recalled that coffee-charcoal always has the odor of coffee. A complete carbonization is not necessary.

—*M. B.*

492—Höflich, O.: **Vitamin-C-Therapie bei Zahnfleischerkrangungen.** Vitamin C therapy in gum diseases. *Dtsch. Zahn. Wschr.* **32**:760. 1938.

Gum disease is now recognized as a manifestation of a more or less definite lack of vitamin C, and is similar to lighter prescurvy diseases, with its symptoms of easily-bleeding, inflamed, and reddened gums. The synthesis of ascorbic acid now simplifies the treatment of the condition with synthetic preparations of vitamin C, such as Cebion and Redoxon. Because of the experience in the use of vitamin C in practice, we can today recognize two groups—infectious cases and hemorrhagic diathesis. We know that the need for vitamin C is increased in these disorders, and vitamin C is able to exercise a direct curative effect.

Gum massage with Cebion paste should be used as a supporting measure in the treatment of paradentosis; but because its etiology is still not fully clear, general paradentosis therapy must in no way be omitted. This holds true, also, for gingivitis and stomatitis; other causal factors must be found and remedied. Auto-intoxication from intestinal disorders is one factor which may often be important and which must be corrected.

The author cites five cases from his experience, of paradentosis and gingivitis. He has found only two cases where the use of Cebion paste had no effect; he suspected hormone disturbances in these cases.

—*M. B.*

493—Hubner, H.: **Methoden zur Messung der Taschentiefe bei Paradentitis marginalis progressiva.** Methods of cutting the gingival pockets in paradentitis marginalis progressiva. *Dtsch. Zahn. Wschrft.* **19**:443. 1938.

The author appraises various methods and instruments for diagnosis of gingival pockets in paradentosis. The simplest method is the use of a sharp probe; but this technique is too crude and not sensitive enough. Sachs has constructed an instrument, which is already well-known; a full description, with an illustration, is given of this instrument. It makes possible a quick, easy, and accurate diagnosis of gingival pockets.

The so-called "Duka-apparatus" also makes possible an accurate observation of the pocket depth, but it is not as easy to use as other instruments. The use of the "Paradentometer" is appraised, but the author does not consider it suitable for paradentosis; he recommends, instead, the use of a needle wrapped around with cotton for the application of medicaments.

X-rays are used to determine the proportions of the pocket and the bone margin. To make the depth of the pocket visible, some means of contrast must be used. Sachs suggested the use of fine gold wire; silver points have been found to be best, and are now preferred.

In conclusion, the author recommends the use of Sachs' knife for the excision of gingival pockets.

—*M. B.*

494—Iskraut, H.: **Zum Problem der Paradentose.** On the problem of paradentosis. *Schw. Mschr. f. Zahn.* **1**:85. 1938. (Originally appeared in *D. Z. W.* **1**:9. 1937).

A discussion of the influence of hormones and vitamins upon the development of the alveolar bone, and consequently the vessels of circulation described by Krieger.

Disturbances in the vitamin system show themselves first of all in the gingiva without circulatory vessels. The great difficulties of giving doses of hormones and vitamins always forms a considerable handicap for their therapeutic application.

—*M. B.*

495—Jaccard, R.: **Arcs Abrasifs.** Abrasive arches. *Schw. Monat. f. Zahnheilk.* 12:830. 1938.

Abrasive arches are designed for use in spot grinding in an entirely functional manner, since burs in grinding hardly give an exact functional reparation in correcting malocclusion in paradentosis. The apparatus consists of a flat plate in the form of a U, having approximately the masticatory dimensions, with a prolongation at one end as a handle; it carries an abrasive material on one or both surfaces. After grinding with burs, this arch is introduced into the mouth and held by the handle, placing the U-shaped portion between the jaws. The occlusal surfaces are thus separated. With the arch in position, the patient performs triturating motions with the mandible: from side to side, and from front to back, with the jaws in the position of occlusion. Thus, the parts of the teeth which are in malocclusal relationship are ground down.

The grinding of the occlusal surfaces must be started, however, with abrasive burs, after an examination of models to obtain the points of functional contact. Abrasive arches simplify the operative procedure. It is advisable to commence abrasion very early in treatment. These arches are made in three different grades, one is for obtaining rapid abrasion and one is for finishing—a very fine-grained one.

—*M. B.*

496—Karli, H.: **Le dosage du phosphore chez les paradentosiques.** Phosphorous dosage in patients with paradentosis. *Schw. Mschr. f. Zahnheilk.* 5:467-512. 1938.

The author first discusses the forms of phosphorus in the body, both organic and inorganic, and the role of various phosphorous compounds; then, the variations in proportion of phosphorous in the organism, influenced by types of food eaten, assimilation, fasting; and also, the significance of variations in phosphate content of the body, both physiological and pathological.

There follows a discussion of the calcium-phosphorus metabolism: forms of calcium in the blood, the Ca/P ratio (in general, the Ca value in the blood is increased in paradentosis); the relations between Ca and P in ossification, and suggested formulae for the calcium-carbonate-phosphate complex forming the stable mineral basis of bony tissue; the dependence of bone formation on the acidic-basic equilibrium with basic predominance, acidosis leading to decalcification.

Various theories are cited as well as experimental research, and conclusions on the relationships between paradentosis and bony distrophy, bone diseases due to acidosis; the general conclusion is that bone distrophy is due to a state of acidosis.

Original experiments of the author were done under the most precise conditions, taking account of all possible factors, and were done using venous serum; the technique used in determination of values was the colorimetric method of Benedict and Theis. Patients used for the experiments were of three types: those with paradentosis, gingivitis, and multiple caries, using radiography to check the type of paradentosis.

Conclusions of these experiments:

1. The phosphorous metabolism disturbances can be found in different forms of paradentosis.
2. It is impossible to differentiate between types of paradentosis by values of phosphorous in blood.
3. Values are decreased more markedly for the inflammatory than for the mixed type; and more markedly for the mixed than for the dystrophic type of paradentosis.
4. The decreased P content relates paradentosis to Recklinghausen's malady rather than to that of Paget.
5. Gingivitis presents an average P value, which is higher than that of paradentosis.
6. In multiple caries, the P value is lowest: the average is 30.65 mgr./1000cc. as compared to a normal value of 35 to 40 mgr./1000cc. It is in these cases that therapeutic methods employing phosphorous can give the best results.

—*M. B.*

497—Kohler, G.: **Le problème de la fixation des dents dans le traitement de la paradentose.** The problem of tooth fixation in the treatment of paradentosis. *La Rév. Odontolog.* 1:73-74. 1938. (Originally appeared in *Svensk Tandlakare-Tidskrift.* Nov., 1937).

The author criticizes the different methods of fixation. He rejects those which necessitate devitalization of teeth; he also protests against fixation of bicuspids and molars, for which he advises extraction and replacement. He recommends, however, in every case the fixation of incisors and cuspids.

He praises the use of the horizontal pivots of Trueman and Witkowsky, which he has modified. Horizontal canals are made in the incisors at equal distance from incisive border and top of pulp, and made parallel to one another. Pivots are made of platinum wires; the pivots of the incisors are bent round on themselves at their lingual end, and the buckle thus formed is filled with fine gold. The gutter is cast in three sections around the bent ends of pivots of the incisors only. An impression is taken with the sections in place and they are soldered to one another.

Canals of the cuspids are not parallel to those of the incisors, and are made once the gutter is adjusted to the incisors. Perforation of the gutter is made at the same time as that of the tooth. The lingual extremity of the cuspid pivot is built in the form of a ball; the lingual opening of the gutter canal is dug with a round fluted cutter so that the head of the pivot enters the cavity with force. When the whole thing is cemented, it is easy to rivet and polish whatever extends beyond the pivot.

—*M. B.*

498—Kramer: **Untersuchungen über C-Hypovitaminosis bei Paradentopathien nach der Methode Tillmans, modifiziert von Jezler und Niederberger.** Studies on vitamin C deficiency in paradentosis according to Tillman's method, modified by Jezler and Niederberger. *Paradentium* **2**:61. 1938. (Originally in *Dtsch. Militararzt.* **12**. 1937).

Dr. Kramer, in his position as troop dentist, came across only the inflammatory forms of paradentopathology—chronic gingivitis, acute gingivo-stomatitis, and inflammatory paradentosis.

His own local treatment of gingivitis and stomatitis gave discouraging results; he was then led to the study of vitamin C deficiency in these diseases through an article of Gander and Niederberger on the "Vitamin C need of old people." In six months, he studied 34 cases of gingivitis and stomatitis, according to the method of Jezler and Niederberger for vitamin C deficiency; he treated cases of deficiency with Redoxon. In all, he treated 86 soldiers with vitamin C. He found that after giving 1000 mg., in no case was there an increased excretion in the urine; only after 2000-2500 mg. was there a definite increase of the quantity of vitamin C in the urine. A case of bleeding gums is described, which was cured by correcting the vitamin C deficiency with Redoxon (altogether 3200 mg.). About 20% of the troops suffered from bleeding gums as a symptom of vitamin C deficiency.

—*M. B.*

499—Kuthan, F.: **Vitaminbehandlung bei Zahnfleischblutungen, Gingivitis, und Alveolarpyorrhoe.** Vitamin treatment of bleeding gums, gingivitis, and pyorrhea. *D. Z. W.* **46**. Nov. 18, 1938. (Originally appeared in *Ars Med.* **2**. 1937).

If these conditions are toxic, infectious, or due to abnormalities of the blood, the author recommends giving vitamin C, often in conjunction with vitamin A. For the former, give daily one ampoule Redoxon cantan or Cebion. Vitamin A is applied as Vogan (two tablets three times daily), or as Amunine (twenty drops three times daily).

—*M. B.*

500—Lampert, H.: **Die bedeutung der reaktions-typenlehre für die behandlung der paradentose.** The importance of reaction-type classification for treatment of paradentosis. *Paradentium.* **6-7**. 1938.

It is possible to ascertain two large groups of humans which are, on the whole, diametrically opposite. The essential point is that the two types of constitution, A and B, do not exist as pure forms; all individuals are of the mixed type, but in one group properties of the A type will predominate, and in the other, properties of the B type. The properties, both of physical and characterological kind, are described fully in the article.

The theory of reaction-type is particularly important in paradentosis, because, on the strength of common researches with Prof. Elbrecht, the author has obtained x-ray statuses of teeth, to which reaction-type certain individuals belong. For therapeutic treatment, there are the following directions: When the patient is of reaction-type A, he should be given food more abundant in albumin (which is potentially acid), whereas reaction-type B should be given alkaline food.

—*M. B.*

501—Leopold, E.: **Erfahrungen mit Vitamin C in der Zahnartzlichen Therapie.** Experiences with vitamin C in dental therapy. *Z. Rund.* **16**:687. 1938.

Dr. Leopold has used the vitamin C preparation Redoxon in his practice for two years; it has given good results in gingivitis, stomatitis, paradentosis, and progressive caries. Besides, the author has observed that, through peroral Redoxon medication, the series of wounds healed quickly and without complications, and the pain of the wound almost entirely failed to appear. Generally, peroral doses followed, and only in certain cases were doses given parenterally. The usual dose was, in first few days, 4-6 tablets, and increasing to twice that until the end of treatment.

Better results were obtained when the patient let the tablet melt slowly in the mouth; apparently, ascorbic acid had a beneficial effect on the mucosa and perhaps an actual absorption took place. In a few cases, in which peroral medication was not successful, injection of an ampoule of Redoxon to quickly counter-balance the vitamin C deficiency was given; then, twice weekly, two ampoules of Redoxon of 2 cc. each were administered, and on days of no injections, four tablets. Together with healing of symptoms of the disease, the author also noticed an improvement in general health, especially in pregnant women. Several cases are cited.

He advises this treatment for gingivitis: Place 2-3 tablets Redoxon on the inflamed regions. As soon as they start to melt, massage them into the pockets and surrounding regions; this results in spontaneous alleviation of pain; in a few days, generally, there is an improvement in the clinical picture.

—*M. B.*

502—Linka, G.: **Cosa e in realta la piorrea.** Definition of pyorrhea. *Schw. Monat. f. Zahn.* **1**. 1939. (Originally in *Rev. Italiana di Stom.* **4**. 1938.)

The author distinguishes paradentosis with suppuration from the true pyorrhea. The latter would be only an exaggeration of a physiological process, an influx of leucocytes with the function of eliminating toxins in the buccal cavity through the path of the paradentium. This exaggeration results in the formation of purulent pockets. Linka advises against surgery; he uses massage and his medication "Penetrina," and advises, also, the use of purgatives and a prescribed diet.

—*M. B.*

503—Lutsch, B.: **Beitrag zur Radiumtherapie der Paradentose.** Contribution to radium therapy for paradentosis. *Z. Rund.* **34**:1415. 1938.

In dentistry, the use of radioactive substances is many-sided: strong irradiation is indicated in granuloma and cysts; weak irradiation in form of radium compress in painful and inflamed jaws; also, there is the irradiation therapy in diseases of the paradentium. Therapeutic methods include: mouth washing with radium irradiated mineral water, and especially radium-containing paste applied in gingival pockets, the latter giving the best results.

Dr. Lutsch employed the preparation Paragol containing several drugs in the treatment of paradentosis and gingivitis. Paracid starts the treatment and is a good bactericide; then Paragol-Salve which contains radium, and stimulates the formation of sound granulation in gingival pockets. For gingivitis, Paragolin is used, which is applied to the gums; since it has no irritating effect on the mucosa, a safe cure is effected in a short time; it also relieves pain, due to its anesthetic effect. In severe cases of paradentosis, the preparation Radiagol-Mouthwash is suitable, and an appropriate tooth brush for gum massage is recommended.

The results of the author's use of Paragol therapy have completely satisfied him; Radium-containing preparations can be useful in the treatment of paradentosis, and therefore deserve the attention of dentists.

—*M. B.*

504—Manson-Bahr, P. and Ransford, O. N.: **Stomatitis of vitamin B_2 deficiency treated with nicotinic acid.** *London Lancet*, Aug. 20, 1938: Abstr. from *J. A. M. A.* **3**(17):1602. Oct. 22, 1938.

Authors call attention to benefits from administration of nicotinic acid in what may be called pre-pellagrous states. In temperate climates cutaneous lesions are absent and the deficiency shows itself by stomatitis with a characteristic desquamation of the tongue, and chronic diarrhea. Case is cited of a woman, aged 62, in whom these symptoms were corrected promptly by administration of 150 mg. of nicotinic acid daily for ten days; and a full diet.

—*C. R.*

505—Meyer, H.: **Lokale Therapie mit Vitamin C.** Local therapy with vitamin C. *D. Z. W.* **41.** Oct. 14, 1938.

Dr. Meyer cites his experiences using local therapy with vitamin C in the form of Cebion-paste. For gingivitis and stomatitis, he rubs a stick of this paste about one and one-half cm. long on the gums. Then, the patient is advised to carry out the gum massage two or three times daily at home. From about fifty cases, he obtained a cure in 90% in an average of 5-14 days.

In one case, where the gingivitis was already almost gone after one week of above therapy, after suspension of this massage a renewed aggravation of inflammation developed; this the author interprets as a proof for the need and correctness of this method. After ten more daily treatments, the clinical syndrome was eliminated; the redness and protuberance of the gum edges had disappeared, the gums and mouth in general were again in good condition.

In all cases of gingivitis and stomatitis Dr. Meyer advises the massage of the gums with Cebion-paste in addition to the usual, mechanical local treatment.

—*M. B.*

506—Michaëlis, Dr. H. K.: **Saug-und Ozontherapie bei der Behandlung von Paradentose und Würzelkanalen.** Suction and ozone Therapy in paradentosis and root canal treatment. *Dtsch. Zahn, Mund u. Kieferheilk.* **6.** 1938.

Dr. Michaëlis discusses the apparatus recommended by his colleague, Dr. Bruske of Amsterdam, for paradentosis therapy; Dr. Bruske believes that dentists should administer local treatment only. The following are the advantages of his method:

1. He sucks septic and chemically noxious materials out of the tissues, and expedites the influx of leucocytes, which makes it free of active bactericidal enzymes.

2. He activates metabolism by evoking a reactive hyperemia; he increases the flow of lymph.

3. He exercises a favorable massage, while, by intermediate movements, tractive force can be exerted, which has a very favorable functional influence on the tissues, a factor not possible by the usual methods of gum massage.

The types of suction pumps in the apparatus are described. The length of treatment depends upon the individual case.

Dr. Michaëlis himself uses hemogram analysis for differential diagnosis of the various types of paradentosis; he discusses the method used for this. In no case of paradentosis should the suction method be neglected.

Capillary microscope is used to observe the condition of the capillary loops, comparing their form in the gingiva, lips, and nail bed. If arteriole is too wide in diameter, oxygen must be insuffused; if too narrow, carbonic acid is to be employed. Instead of oxygen, ozone has been found more effective; a summary of its advantages is given. The author has found a combination of suction and ozone therapy extremely efficacious.

(The remainder of the article is devoted to the use of this same therapeutic method in the treatment of root canals).

—*M. B.*

507—Neuwirth, Prof. Dr. F.: **Über Aussichten des Kampfes gegen Paradentium Erkrankungen.** Views on the fight against paradental diseases. *Z. Rund.* **15**:651. 1938. (Originally in *Ceskoslovenska Stomat.* **1.** 1938).

The author approves increased interest in diseases of the paradentium, which rob mankind of the dentition to a greater extent than caries. Investigations on sound and diseased paradentium have made in recent times important improvements and the therapy is more successful than formerly.

The basis of appropriate therapy must be, however, medical treatment. The pathologic-anatomic substrata is a source of the greater part of these diseases, certainly with all its relations to the inner medium. In this connection, the author emphasizes the powerful effect of hypovitaminosis in therapy of preparadentotic conditions.

—*M. B.*

508—Pfleger and Scholl: **Diabetes und Vitamin C.** Diabetes and vitamin C. *Z. Rund.* **21**:910. 1938. (Originally in *Wien. Medizin. Wchschrft.* **13.** 1938).

In diabetics, generally, a vitamin C deficit of up to 2500 mg. was found. An attempt was made to correct this hypovitaminosis through the administration of Redoxon, and after reëstablishing the normal status, the influence of carbohydrate was tested. When diabetics were not treated with insulin, no effect of ascorbic acid on sugar in blood and urine could be determined, but the strong influence of the burning of acetone bodies could be determined.

It was established further that an increase in the effect of insulin through the use of ascorbic acid was obtained after Redoxon administration. In normal individuals, there appears no significant difference, in blood sugar on an empty stomach or in metabolic curves, with or without vitamin C absorption; with insulin, however, an increase in insulin effect occurs after such absorption. There is the possibility that this increase of glycogen assimilation of the liver in an organism fed vitamin C depends on an insulin activation. Moreover, the administration of ascorbic acid (Redoxon) has an important tonic effect in diabetes. Both authors indicate that most diets for diabetics are often very poor in vitamin C.

—*M. B.*

509—Query: **Extraction of pyorrheal teeth.** *J. A. M. A.* **110**(22):1855. May 28, 1938.

Question involves extraction of all upper teeth for a young woman in good general health except for a slightly troublesome coxalgia. Teeth have deep pockets and are discolored and widely spaced. Patient's means are limited. Physicians are too prone to advise extraction without sufficient regard for ultimate effect on patient's health, but dentists often retain teeth too long without consideration of remote effects on patient's health. It is extremely doubtful whether complete eradication of mouth pathology would relieve coxalgia but all things considered removal of teeth is best procedure in this case; because depth of pockets as revealed by x-rays makes protracted treatment necessary with uncertainty of permanent results and later on more of process would be resorbed; artificial teeth could be a cosmetic improvement and probably less expensive than the periodontal treatment; and because of possible danger of infection from such teeth acting as foci even though cared for regularly.

—*C. R.*

510—Query: *J. A. M. A.* **110**(3):227. January 11, 1938.

Replying to physicians making inquiry regarding persistent rapid deposit of salivary and serumal calculi on lingual surfaces of prognathus individual, calcium and phosphorus blood content normal and no endocrine disturbance, editor quotes Dr. G. V. Black's classical experiments on the effects of over eating; explains further that serumal and salivary calculus are similar if not identical chemically except for inclusion of blood pigmentation and other effects of location of the former beneath the gingival margin. "It is probable that serumal calculus occurs because of opportunity presented by the pyorrhea pocket and in turn contributes through irritation to the progress of this condition." Occasionally both can be controlled by careful diet and teeth should be kept scaled and gums as free from irritation as possible in the meantime.

—*C. R.*

511—Query: *J. A. M. A.* **111**(22):2035. Nov. 26, 1938.

Concerning gentian violet for oral lesions, editor states that aqueous solutions are nontoxic and non-irritating yet mildly antiseptic and thus probably but slightly beneficial in Vincent's infection though sodium perborate and hydrogen-peroxide are more effective. Gentian violet is especially good for thrush and other fungus infections, .5 to 1% strength being safe to use in young children. Querist is referred to description of gentian violet in New and Non-Official Remedies—1938.

—*C. R.*

512—Reidel-Schlageter, G., and Reidel, A.: **Zum Karies-Paradentose problem. (Grundsatzliche Bemerkungen um Beobachtungen Vilhjalmur Stefanssons).** The problem of caries and paradentosis. (Review of the observations of V. Stefansson). *Dtsch. Zahn. Wrft.* **26**:610. 1938.

Stefansson, the polar explorer, made various observations on the state of dental health of the Eskimos, in his trips to the arctic; he also took note of his own condition before and after his trips. In this article, the authors discuss these observations and their scientific value.

Active caries and paradentosis are checked by eating raw or half-cooked meat. Cumulative caries and paradentosis are symptoms of a slow scurvy condition. Arctic animals, the caribou and musk-ox, eat plants which contain ascorbic acid; the plants are of primary importance, the meat of animals that have eaten these plants is of secondary importance.

It remains for us to study and experiment with various plants in an effort to find other good sources of Vitamin C besides the ones we now know—oranges and other citrus fruits—in an attempt to fight paradentosis and scurvy conditions in general.

—*M. B.*

513—Rosenthal and Pierron: **Traitement des pyorrhées, gingivites, paradentoses par des injections intraveinuses de fluorure de calcium en suspension magnésienne.** Treatment of pyorrhea, gingivitis, and paradentosis by intravenous injections of calcium fluoride in magnesium suspension. *Schw. Mschr. f. Zahn.* **4**:408. 1938. (Originally appeared in *Rev. de Stom.* **6**:435. 1937.)

In all cases treated, the authors obtained: first, relief of gingival hemorrhages; second, a healthy appearance of the mucosa; third, cessation of gingival pains; fourth, tightening of teeth. Local treatment was interposed only if the mucosa was not aligned to the alveolar border. Three cases of partial bone consolidation, quite distinct despite the persistence of suppuration, prove that the authors have found one of the most powerful recalcifiers in calcium fluoride in magnesium suspension.

—*M. B.*

514—Rygikova, R.: **Irritation ostéogénétique du procès alvéolaire.** Osteogenetic irritation of the alveolar process. *L'Odontologie.* **2**:99. 1938. (Originally appeared in La Stomatologie Soviétique. **6**. 1936.)

Microplastic methods (transplantation of bone shaving) in marginal lesions have given the author, in almost all cases, a favorable clinical development satisfying even radiographic pictures. Clinico-radiographic observations of three months and more have given him the right to say that the bone shaving joins the fundamental bone tissue, increases its osteogenetic capacity, and provokes formation of more bone tissue. The author has been able in a number of cases to reëstablish alveolar bone and partitions, and to firm movable teeth. In two cases of dentary fractures of three years duration, with movability of pieces, he has succeeded in reëstablishing tooth function.

Cases of low alveolar ridges resulting from atrophy, edentulous condition of the maxilla, or faulty development of the alveolar border, can be corrected and made suitable for prosthesis.

This microplastic method is to be recommended in dispensaries, but its technique requires the minutest observation of all precautions.

—*M. B.*

515—Schafermeyer, K.: **Beitrag zur Verwendung von Kaffeekohle nach Heisler bei der Paradentosebehandlung.** Contribution to the use of coffee-charcoal (of Heisler) in the treatment of paradentosis. *Dtsch. Zahn. Wrft.* **26**:612. 1938.

Dr. Schafermeyer gives his own experiences in the use of coffee-charcoal in the treatment of paradentosis. He cites one case of a diabetic, 27 years old, who showed a typical case of paradentosis associated with diabetes mellitus. After removing the tartar deposits and spraying three times he prescribed coffee-charcoal to be rubbed into the gums each night. After eight days, the patient showed remarkable improvement; after another eight days, the clinical picture was better than seemed possible; the pocket formations had disappeared, and no more pus could be squeezed out on pressure. Even the condition of acetone-breath which the patient had had for years, was somewhat relieved.

In three other cases of paradentosis, which he would otherwise have treated with surgery or light therapy, he used coffee-charcoal and obtained equally good results.

Dr. Boas has analyzed the action of coffee-charcoal as follows:

1. Phylogenetic action (on bacteria).
2. Absorbent, drying action.
3. Cell-promoting action (vitamin content).
4. Strong antiseptic action (due to caffein, etc.).

It has yet to be determined which of the above factors is the important one in the action of coffee-charcoal on paradentosis.

—*M. B.*

516—Schour, Isaac: **Calcium metabolism and teeth.** *J. A. D. A.* **25**(5):836. May, 1938.

The author reviews briefly his work and that of others on normal calcium metabolism, and in relation to the adult tooth, the growing tooth, endocrines, vitamines, fluorosis, caries, pregnancy and pathologic calcification, and cites seventy-one references to the literature of calcification of the teeth. He emphasizes that (1) one must distinguish between growing and fully formed teeth; (2) teeth are not storehouses for calcium as is bone; (3) human teeth may serve kymographically in tooth ring analysis of calcification, and (4) calcium therapy in dentistry *per se* is not justifiable. —*J. A. M. A.*, **110**:870, March 19, 1938.

—*Martin Deakins.*

—*Copy.*

517—Schwarz, R.: **Paradentose und Orthodontie.** Paradentosis and orthodontia. *Schw. Monat. f. Zahnheilk.* **12**:1368. 1938.

Schwarz describes the observations and studies, which he has made on the basis of his anatomic, anthropologic, and orthodontic knowledge, on the exact evaluation of all the factors which can promote paradentosis. Comparisons with antediluvian and the younger specimens of related craniums are given to demonstrate that paradentosis is already old. The author describes a few cases of orthodontic therapy in paradentosis, at the ages of 30, 31, and 57 years, which opens up an entirely new field; a reading of this work in the original is of great value; over thirty illustrations are included.

—*M. B.*

518—Sinclair, J. A., D. D. S., F. I. C. D. and O. C. Barker, D. D. S.: **Preliminary report on local use of sulfanilamide in treatment of oral lesions.** *Am. J. Orthodont. & Oral Surg.* **24**(3):266-71. Mar., 1938.

A brief review of current medical literature on the subject with a *favorable* report of the authors' experience in the use of sulfanilamide in oral infection with the exception of Vincent's infection.

It is optimistically stated that,

> Sulfanilamide is indicated in many oral infections but should never be given without the advice and coöperation of a physician. The local use is without toxic manifestations, and the drug may be used in many conditions without fear of complications. During the past seven months we have used this chemical routinely in all infections except Vincent's with results as dramatic as those reported in the medical journals.

This is a live subject and much research and practical use of sulfanilamide has been carried out since the publication of this article. It is thought best therefore, for the reader to refer to later articles by the same authors.

—*G. R. S.*

519—Vincent: **Paradentose.** Paradentosis. *Dtsch. Zahn. Wschrft.* **25**:594. 1938. (Originally in *Rev. Belge de Stom.* **2**. 1936).

The author has investigated the value of using injections of calcium solution; the indication for it is found in the inflammatory type of paradentosis. First, a culture of the bacteria in the gingival pockets is made and, at the beginning of each local or general therapeutic course, a series of autovaccines is injected. In this way, there results, first, an increase in the defensive power and an improvement in the local and general condition. Then local treatment is instituted and the hardening of the paradental tissues is begun with injections of calcium and phosphorous solutions. Anesthesia of the outer tissue by injection is sufficient; the solutions should be slowly sprayed in as an infiltration process.

—*M. B.*

520—Winthrup, J. P.: **Use of zinc peroxide in mouth infections.** Preliminary report, in "*Surgery*," July, 1938. from Abstr. in *J. A. M. A.* **111**(9):876. Aug. 27, 1938.

Winthrup used zinc peroxide in treatment of 10 Vincent's cases 12 of acute gingivitis, 3 of suppurative periodontoclasia and two of radiation necrosis, with good results. Zinc peroxide has nearly as much available oxygen as sodium perborate and it is much more stable. Its oxygen being released very slowly it can be utilized to permeate interstices, pockets, etc., contacting the organisms associated with gingivitis, pyorrhea, etc., and being thus a very desirable disinfectant. The zinc oxide residue is bland and healing. It is best applied as a creamy paste made with water, (the "medicinal grade" of zinc peroxide should be used and "to sterilize it, it should be heated in quantities of not more than 500 gm. for 4 hours"). After local treatment patient uses paste at home, ½ teaspoon per application, massaged with finger into interproximal spaces and along gingivae. Patient should not rinse mouth after applying paste but allow it to remain where it gives off its oxygen for a considerable period. Patients are seen every other day for treatment at the chair and zinc peroxide continued until complete healing takes place, and then one week longer as precaution.

—*C. R.*

521—Wissotzsky, A.: **Le traitement de la paradentose par les hormones.** The treatment of paradentosis with hormones. *La Rev.* Odont. **9-10**:603. 1938.

The author has found that 100% of patients with endocrine disorders have paradentosis; and on the other hand, that 40% of pyorrhetics have endocrine disorders. These figures show incontestable evidence of a relationship between pyorrhea and

endocrine disorders. He holds with the opinion of Maurice Roy, that local causes cannot provoke pyorrhea without internal predisposing factors, if these general causes are not present, local anomalies alone could never cause true paradentosis.

Dr. Wissotzsky puts forth the idea that the dental pulp is similar to a gland of internal secretion. It secretes a substance called "K", which depends on the presence of round cells; and another substance called "P," which depends on the presence of fusiform cells. An increase in the number of round cells causes an increase in the production of K, and destruction of calcified dental tissues results (caries); decrease in number of round cells results in decrease in K, excess of P, which acts destructively on paradentium and the root of the tooth. Since the pulp is an endocrine gland, or plays a similar role, it reacts to the disorder of another endocrine gland and produces pyorrhea alveolaris.

The author concludes with his experience in the use of insulin in the treatment of pyorrhea, using it in the form of a powder and a liquid which were mixed into a cement-like paste, which he calls "Dentormon." In cases of very deep gingival pockets, a cuneiform incision is made with its base at the cervix of the tooth. After the hemorrhage is stopped, Dentormon is applied with a spatula and pushed as deeply as possible under the gum; it usually stays in place several hours or even days, but should be replaced each day, after spraying the pocket alternately with weak solutions of tannic acid, boric acid, and salt. The Dentormon seems to attack the cause of the disorder, and promote the improvement of the gingiva up to the surrounding teeth; it also seems to act as a detoxifier.

—*M. B.*

(h) Vincent's Infection

(Continued from 9(2):113, July, 1938)

228—Parks, S. R., D. D. S.: **Vincent's infection.** *J. A. D. A.* **25**(3):427. March, 1938.

Several symptoms characteristic of Vincent's infection are (1) sudden onset (2) pain (3) grayish white ulcers. The latter may easily be distinguished from syphilitic and diptheritic ulcers which also occur in the mouth.

While bleeding is a common symptom it is not necessarily characteristic since it is found in gingivitis and often in periodontoclasia.

The value of the microscope in diagnosis is questionable and the author recalls the research of Theodore Buest for the American Dental Association ten years ago; the results showed that the fusiform bacillus and the spirillum can be found in most normal mouths. The author states that he has confirmed Buest's findings many times.

The treatment of Vincent's infection which is limited to medication only is condemned since it often results in producing potential Vincent's infection carriers. Physicians, oral surgeons, and exodontists are most often the ones guilty of this limited treatment. The treatment should always include subgingival curettage after pain has ceased.

Hydrogen peroxide is preferable to sodium perborate; chromic acid, from 5% to crystal form, silver nitrate, and trichloracetic acid are recommended as effective medicaments.

Few cases of Vincent's infection are uncomplicated and the mouth should be placed in a state of health before patient is dismissed.

—*G. R. S.*

229—Query. **Re: Vincent's infection.** *J. A. M. A.* **110**(5): 389. Jan. 29, 1938.

Physician describes case of supposed Vincent's infection which failed to respond to Talbot's solution, chromic acid or intravenous neo-arsphenamine, liver extract or ultra violet irradiation. Treatment should best be directed against the etiologic factor ("symbiosis of anaerobic or aerobic organisms with spirochetes and fusiform bacilli presenting in great numbers"). Oxygen-freeing agents such as hydrogen-peroxide and sodium perborate have cleared up hospitalized cases in 24 to 48 hours by carrying out above treatment every 15 minutes. Lately neo-arsphenamine has been advised; usually local prophylactic methods are also used. Exposure, exhaustion, malnutrition and insanitary conditions are accessory causes. There is some question as to the true nature of so called "chronic" Vincent's infection but the fact that it responds

promptly to anti-spirochetal therapy would seem to prove the etiologic significance of Vincent's symbiosis in this condition. Present case may not be Vincent's infection since specific, neo-arsphenamine, has not been effective. Determination of exact nature of chronic gingival inflammation requires services of a well-trained dentist.

—*C. R.*

(i) Miscellaneous

(Continued from 9(2):119. July, 1938)

194—Current Comment: **Electric currents in mouth.** *J. A. M. A.* **111**(25): 2306. Dec. 17, 1938.

Editor comments on findings of Reinhard and Goltz in November *Items of Interest* to the effect that although electrical action between dissimilar metals can damage soft tissues, this current can flow in the mouth only when the protective mechanisms (film formation, etc.) have been removed.

—*C. R.*

195—Editorial: **Dangers of sodium perborate in mouth.** *J. A. M. A.* **110**(6):445. Feb. 5, 1938.

Editorial is inspired by result of Hirschfeld's questionnaire on effects of sodium perborate as shown by clinical observations. Commenting on harmful results of the promiscuous use of sodium perborate in dentifrices, editor sounds a note of warning on self-medication with active drugs in general; more particularly on the dangers involved in the patient's diagnosing his own case incorrectly as Vincent's infection and perhaps delaying adequate care of such constitutional conditions as pernicious anemia, leukemia, scurvy, etc., which need prompt attention.

—*C. R.*

196—Eyheremendy, J. R.: **Odontokiliose: Raisons d'être de ce nouveau terme.** Odontokiliosis: Justifications for this new term. *L'Odontologie.* **2**:97. 1938. (Originally appeared in *Rev. Belge de Stomat.* **1**. 1937).

The author, who has already proposed this term odontokiliosis to replace that of paradentosis which he finds inappropriate (in the *Revista Odont.* of Buenos Aires in 1935), has just published a new work to defend his ideas.

To justify this term he lays down, first, the rules which he considers rational to establish the name for this disease, and rejects the terms derived only from affected tissues, those derived from passing symptoms, etc. Then he criticizes particularly the term paradentosis and analagous terms, which constitute an etymological barbarism; he shows the Greek word "para" means "next to," "contiguous." He proposes the term "odontokilie," from the Greek "kylix" (vessel for drinking) to designate the organs of support of the tooth, replacing the words paradentium and paradental; this word, he considers, corresponds exactly and only to the tissues of support and retention of the tooth.

To this term he adds the suffix "ose," which expresses best, he thinks, that special pathological state which depends on various internal factors, and imprints definitely its particular stamp on those syndromes.

—*M. B.*

197—Garcia, C. A. C.: **La Clinique de Paradontie de l'Ecole dentaire du Chili.** The Periodontology Clinic of the Dental School of Chile. *Schw. Mschr. f. Zahn.* **3**:305. 1938. (Originally appeared in *Rev. de la Soc. Odontolog. Cubana.* Oct., 1937, pp. 53-55).

Courses are given in the fourth year which are required courses, and take place three times a week. The clinic has laboratories of radiography, bacteriology, physiological chemistry, and pathological anatomy. After studying embryology, histology, and normal anatomy of the paradentium, students pass on to pathology, according to the international classification of the Arpa. Special attention is given to gravidic, uremic, leucemic, and agranulocitosis types of gingivitis.

For treatment, students use the most modern surgical techniques (conservative and radical), and chemical physical, and biological procedures; the prosthetics are made in the crown and bridge clinic.

—*M. B.*

198—Garvin, M. H., D. D. S.: **What is surgery's place in periodontia.** *J. A. D. A.* **25**(1):28-31. Jan., 1938.

The discussion relates specifically to the place of surgery in the treatment of that form of periodontoclasia with definite pocket formation.

The author agrees with Fish *(J. Brit. D. A.* **61**:336, Sept. 15, 1936), that there is

greater danger of toxic absorption and of microörganisms passing into the blood stream from infected periodontal sulci than from pulpless teeth unless the latter are loose or the root canals unfilled. When the teeth are loose and are used in mastication there is a pumping action which may accelerate the passage of either toxic substances or bacteria into the circulation.

In order to enable the general practitioner of dentistry to serve those patients of low income in the shortest possible time where there are pockets of considerable depth, gingivectomy is advised as the most satisfactory method of treatment. This operation is described in detail and it is not considered difficult if properly done. The time spent by the operator is much less than if the conservative treatment had been used.

The importance of the patient's personal after-care of his teeth and gums is emphasized and the Charter's method of brushing is recommended. Considerable stress is placed upon the use of interdental stimulators night and morning to stimulate and harden the epithelium between the teeth. Prophylactic care every three or four months is advised to prevent recurrence of periodontal disease.

—*G. R. S.*

199—Loveman, A. B.: **Stomatitis venenata.** *J. A. D. A.* **25**:835. May, 1938.

This article is concerned with a case of sensitivity of the mucous membrane and skin to oil of anise. A stomatitis was noticed in a patient's mouth where the mucous membrane contacted the dentin. When "patch tests" of the dental cream were made, a severe vesicular reaction occurred. When the various ingredients were tested individually, oil of anise was found to be the cause of the trouble. It is suggested that more experimental study be made by means of cutaneous hypersensitivity when similar cases present themselves.—*Arch. Dermat. & Syph.*, **37**:70. January, 1938.

—B. J. Frey

200—Marcus, S.: **L'absorption par l'organisme du contenu des periodontes inflammés chroniquement.** Absorption by the organism of the contents of chronically inflamed periodontal tissues. *L'Odontologie.* **12.** 1938. (Originally appeared in *La Stomatol. Soviétique.* **2.** 1937).

Discussing again the same subject as Meissakhovitch, Marcus establishes that the passage into the organism of iodine preparations from the paradentium is proven:

1. By the presence of iodine in urine.
2. By presence of iodine in saliva taken in the canal of Stenon or in mixed saliva.
3. By coloration of starch mucosa in apical region of the tooth in question.

The two first facts arise from the introduction of iodine into the kidneys and salivary glands through the blood stream; the third shows that externally a diffusion of iodine takes place through the tissues which surround the apex toward the buccal cavity (paradentium).

—*M. B.*

201—Nordenmark W.: **Gingivitis bei Kindern.** Gingivitis in children. *D. Z. W.* **13.** Mar. 11, 1938. (Originally appeared in *Svensk Tandlakare Tidskrift.* **30.** 1937).

A study of school children in middle Sweden showed that 12% of children between 10 and 16 years had gingivitis. Children of less wealthy parents, who received a school breakfast, were harder hit than others. In treatment, doses of ascorbic acid and fruit juice were administered, since ascorbic acid alone did not lead to equally good results.

—*M. B.*

202—Query: **Allergy to mercury in amalgam fillings.** *J. A. M. A.* **111**(17): 646. Aug. 13, 1938.

Editor states that allergy to mercury is a very common cause of allergic dermatitis usually by direct contact with skin in handling mercury compounds or by using mercural ointments and antiseptics containing mercury. If patient is sensitive to mercury as was evidenced by the experimental production of a skin reaction in case mentioned, it would seem reasonable that with "many silver amalgam fillings" patient could absorb enough to produce poisoning and inflammatory skin reactions. Other metals used in fillings are also to be considered as possible causes of dermatitis. Many reports of mercury poisoning from amalgam fillings are found in the literature. A case of dermatitis from this cause was reported by F. Blumenthal and K. Jaffe in *Deutsche Med. Wochenshrift*, Oct. 11, 1929; and other cases of poisoning from amalgam fillings have been reported by A. Stock in *Arch. f. Gewerbepath u. Gewerbehyg.*, 1936; K. Stefensen *Ugesk. f. laeger.*, Aug. 2,

1936; W. Herrenknecht and C. Scheidt in *Fortschr. D. Zahnheilk.*, Aug. 1930; E. Meyer, *Med. Welt*, May 17, 1930; A. Fluchel Aertz, *Zahnartz, Rundschau*, October 25, 1928.

203—Query: **Chronic recurrent canker sores.** *J. A. M. A.* **110**(15):1212. April 9, 1938.

A severe, long standing case in a woman aged 25 is described. Blood count, elimination and diet have been studied and vitamin therapy given as well as usual local treatment. Canker sores were first described by Hippocrates but accurate knowledge concerning them is still very meager. This case would seem to fall into one of two groups, habitual aphthae or chronic intermittent aphthae. The first are dyspeptic canker sores which have been considered either low grade infections or allergies. Vitamin B deficiency is a possible cause but that having been tried in this case it is advisable to thoroughly work out the allergic possibilities. The second type Mikulicaz's aphthae is primarily found in women in connection with the menstrual period. Etiology is obscure and no specific treatment known. Local treatment with 5% chromic acid or silver nitrate is recommended. In oral lesions associated with dermatitis herpetiformis diagnosis can be certified by the skin lesions. Case described is most likely Mikulicaz's aphthae.

—*C. R.*

204—Query: **Re: Lead Poisoning from tooth paste tubes.** *J. A. M. A.* **111** (15):1399. Oct. 8, 1938.

Danger of lead poisoning from above source is unlikely. Most pastes now are put up in tin-lined tubes or otherwise adequately protected. Discoloration of tooth pastes may be from other source than lead. Danckwortt and Siebler found small amounts of lead but these were insignificant when one considers the small quantity of tooth paste used in cleaning teeth.

—*C. R.*

205—Query: **Salivary and serumal calculi.** *J. A. M. A.* **110**(3):227. Jan. 15, 1938.

An individual has excessive deposits of serumal and salivary calculus on lingual or lower anterior teeth. Lower jaw is prognathous. Calcium and phosphorous blood content is normal and no endocrine disturbance found. Answer: In a well nourished individual excessive amount of protein and minerals in diet often leaves heavy deposit especially if much milk and rich food be taken. A small amount more than usual dietary intake sometime produces deposit where there was none before, and simple limiting of quantity eaten reduces deposits. Serumal and salivary calculus are the same except for location and blood pigment in sub-gingival deposits. In addition to regulation of diet, careful regular scaling of teeth to keep gingivae free from irritating effects of deposits is helpful.

—*C. R.*

206—Steinmauer, H.: **Viruses in rubella, mumps and aphthous stomatitis.** *Monat. für Kinderheilkunde.* Sept. 9, 1938. From Abstr. in *J. A. M. A.* **111** (20):1887. Nov. 12, 1938.

Steinmauer was able to demonstrate viruses in several children's diseases in which they had not before been found; among these being virus bodies from specimens obtained from aphthae of patients with aphthous stomatitis.

—*C. R.*

207—Tenenbaum, Benjamin, B. S., D. D. S., and Maxwell Karshan, Ph. D.: **Factors in unstimulated saliva correlated with calculus.** Abstr. 104. *J. D. Res.* **17**(4):334. Aug., 1938.

Unstimulated saliva of persons with and without calculus analyzed for total Ca, inorganic P, pH and protein. Saliva collected in 3 successive portions, 1-3 hours after breakfast. First portion (1 cc.) collected under paraffin oil, used for initial pH; second portion (5-6 cc.) used for Ca, P, protein; third portion (1 cc.), collected under oil, used for final pH determinations. Of 46 persons, 20-60 years old, 14 were calculus free and had not had dental prophylaxis for at least 1 year. Remainder had varying degrees of deposits. Mean values for Ca and P in calculus-free group lower than in calculus group; 5.6 mg. percent Ca and 16.8 mg. percent P in former as compared with 6.5 mg. percent Ca and 19.2 percent P in latter group. Much smaller differences in mean values found between 2 groups in pH and protein. Calculus free group: initial pH 6.75, final pH 6.86, protein 306 mg. percent. Calculus group: initial pH 6.80, final pH 6.88, protein 320 mg. percent. Differences in mean values between calculus-free and calculus groups in Ca, inorganic P, pH and protein of stimulated saliva

were previously reported by authors (*J. A. D. A.* **24**:1255, 1937).

—*Copy.*

208—Wannenmacher: **Ist die Paradentose ansteckend?** Is paradentosis contagious? *Z. Rund.* **17**:747. 1938. (Originally in *Med. Welt.* **5**. 1938.)

From its bacteriological character, the answer would appear to be yes; in this connection, lavatory appliances used by many people play an important role, since these appliances are almost always used also for washing out the mouth. An example of this is the contraction of suppurative skin diseases through washing in a bowl in which a paradentotic has previously washed his mouth.

In the last decade, more specific causes of paradentosis have been uncovered, without being confirmed. In paradentitis marginalis chronica progressiva are found cocci, spirochetes, fusiform bacilli, leptothrix, and amebae. As the basis of an acute infectious gingivitis, gingivitis ulcerosa can develop, by neglected or incorrect treatment, into paradentitis marginalis chronica progressiva, in which, however, further disposing factors must come into play. When the secretion in the gingival pockets is heavy, hygienic advice must be followed by the patient.

The spread of paradentosis is truly very great. Although formerly attributed only to old age, we now recognize it as not rare even in youth. In spite of great advances in the study of paradentosis in the last ten years, we have still not reached any great clarity on the subject. It is to be hoped that general medical practice will pay more attention to this disease, just as dental medicine is extending its field of study and observation of general physical symptoms.

—*M. B.*

209—Wishart, G.: **Calcium.** *J. A. D. A.* **25**:671. April, 1938

This paper, essentially a brief review of dental aspects of calcium metabolism, points out the confusion in the work, discusses dietary sources, the properties of calcium and and its rôle in tissue metabolism, absorption of calcium and the daily requirements in normalcy and in pregnancy. Twenty-one references to pertinent literature are given. The author concludes that caries may have several etiologic factors rather than one.

—*Brit. D. J.* **64**:129, 1938.

MARTIN DEAKINS.

—*Copy*

210—Woodruff, P. W. and Hesseltine, H. C.: **Oral thrush and vaginal mycosis,** in *A. J. Obstet. and Gynecol.* Sept., 1938. From Abstr. in *J. A. M. A.* **111** (18):1694. Oct. 29, 1938.

Woodruff and Hesseltine made routine vaginal cultures on 402 women in 3rd trimester of pregnancy and found that babies born of fungi-infected mothers have 35 times greater chance of developing oral thrush than those born to non-infected mothers. Among 14,640 consecutive babies examined incidence of oral thrush was between .6 and 1%.

—*C. R.*

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BOOK REVIEWS

Special or Dental Anatomy and Physiology and Dental Histology, Human and Comparative. By T. W. Widdowson, L. D. S., R. C. S. (Eng.) In two volumes of 852 pages, with 564 illustrations and 12 plates, with a special chapter on "Histological Technique" by J. Leslie Young, L. D. S., R. C. S. (Eng.). Published by John Bale Sons & Curnow, Ltd., London. Review in *J. A. D. A.* 26(5):847. May, 1939.

This book is intended as "a textbook for students, and a ready work of reference for the busy practitioner." Dental anatomy is presented as a phase of biology on a par with cytology, embryology, growth and development, histology, general anatomy and comparative anatomy. The author takes great pains to relate his ideas on anatomy to all those biologic factors of which they are a part. Each chapter is embellished with many references to related ideas, and every controversial subject is impartially presented with due reference to numerous authors. Unfortunately, few detailed bibliographic references have been included. Comparatively little space has been devoted to the detailed anatomic forms of human teeth. The illustrations in this section are made from actual anatomic specimens. The chapter dealing with the histologic technic is not up to the standard of the rest of the book.

Volume 2 is devoted to comparative dental anatomy. Both volumes are well-organized, easily read and fully illustrated. They give the reader a well-rounded, unbiased view of the subjects presented. There is no attempt to convey the thought that these pages contain all knowledge pertaining to the subjects discussed. The author has constructed a road map that gives one a bird's-eye view of the whole and specific directions to any one part.

This text is recommended to students and practitioners.

—*Copy*

Fundamentals of Dentistry in Medicine and Public Health. By John Oppie McCall, D. D. S., F. A. C. D., Director, the Murry and Leonie Guggenheim Dental Clinic, New York City; Consultant in Dentistry, The New York Hospital, New York City. With a foreword by Wilson G. Smilie, M. D., Professor of Public Health and Preventive Medicine. New York: The Macmillan Co., 1938. Review in *J. A. D. A.*, 26(5):848. May, 1939.

The realization on the part of medicine of the far-reaching influence that dental infections may have on the general health furnishes the motive for the author to present in compact form, basic information about teeth that the physician, nurse and public health worker may seek.

Dr. McCall's association with practically every phase of dental health service being offered to the public fully qualifies him to supply this basic information in the manner most intelligible to all health workers, and he has here presented what he considers to be the information desirable and in a manner readily understandable by the lay health worker.

A statement in the foreword by Dr. Smilie, teacher of public health in a medical school, to the effect that in the medical curriculum "not one bit of consideration is given to the structure, function, and disorders of the teeth," affords ample justification and motive for the effort of the present author to assemble in readily receivable form information about the teeth and mouth.

It is not desirable to incorporate all of dentistry in the medical curriculum any more than it is desirable to incorporate all of medicine in the dental curriculum, but the comparatively recent and significant broadening of the scope of dentistry by virtue of the influence of mouth infections upon the system makes it necessary for the medi-

cal man to know more about dentistry, the dental man to know more about medicine and the public health worker to know as much as he can about both. The author has here assembled such elemental knowledge of dentistry, and his judgment in the selection and extent of the knowledge presented, as well as the attractive manner of presentation, is good.

The book is well illustrated and well printed on good paper, with large readable type, which makes reading a pleasure. Everyone interested in the intimate relation of dental disease to body disease should read this book of 161 pages.

—Copy

Internal Medicine in Dental Practice. Edited by Bernard I. Comroe, A. B., M. D., F. A. C. P., Instructor in Med., Schools of Medicine and Dentistry in Univ. of Pa., Philadelphia. Leon H. Collins, Jr., A. B., M. D., F. A. C. P., Associate in Med. in the Univ. of Pa. School of Medicine; Instructor in Med. in the Univ. of Pa. School of Dentistry, Philadelphia; Secretary, Commission for the study of pneumonia control of the Medical Society of the State of Pa. Martin P. Crane, B. S., M. D., Instructor in Med. in the Univ. of Pa., Philadelphia; visiting physician to the Miseriocordia Hospital, Philadelphia; chief Coroner's physician, Philadelphia, 352 pp., illustrated with 44 engravings, and a colored plate. Lea & Febiger, Philadelphia, 1938.

The broader concept of dentistry as an integral part of general health service has brought out the need for closer coöperation and consultation between members of the dental and medical professions. *Internal Medicine in Dental Practice* will be found very helpful to dentists in this relationship.

In it will be found a brief description of a great many of the usual diseases encountered in the general practice of medicine. The book is so arranged and indexed that one can readily find the particular condition in which he may be interested; and those diseases having dental complications are emphasized.

Diseases of the heart are of special importance in relation to the choice of anesthetics for use in dentistry. The dentist may be the first to observe certain suggestive symptoms of cardiac failure. These he should be able to recognize and he should also be familiar with the treatment for emergency conditions.

Almost all of the diseases of the blood and blood-forming organs exhibit some local signs in the mouth. Examples of these are the necrotic form of stomatitis in agranulocytic angina, the profuse steady oozing of blood from the gingivae in purpura hemorrhagica, the red smooth sore tongue of pernicious anemia, the pallor of lips and tongue in severe secondary anemias, and hemophilia. Unquestionably where these diseases are suspected, the patient should have a complete physical examination. In agranulocytic angina, necrotic areas in the mouth are usually the first and at times the only sign of the disease. Physicians and dentists are warned against the careless use of sedative, hypnotic, and analgesic drugs in their own families.

In discussing diseases of the gastro-intestinal tract the dental factors may be considered both as direct and indirect causative agents. Improperly masticated food may be a source of direct mechanical irritation; gastro-intestinal disturbances may result indirectly from a local infection in the mouth; for example organisms in the infected gall bladder have been found to be identical with those occurring about infected teeth.

A complete summary of the many oral manifestations of diabetes is tabulated.

Dental infections are associated with many kidney diseases and in chronic uremia a stomatitis is always present.

Gingivitis and pyorrhea have at times been linked with disturbances of the gonads. There is a much higher incidence of gingivitis in pregnant than non-pregnant women.

The treatise on diseases of the joints and related structures is comprehensive and interesting from a dental standpoint. Dental infection often contributes to rheumatic fever and chronic atrophic arthritis, but focal infection should not be considered an etiologic factor in all cases of arthritis.

Many diseases of the eye, ear, nose and throat are associated with dental infection, and cases in point are cited.

Hypothyroidism may cause faulty jaw development resulting in mal-occlusion with subsequent periodontal lesions. Prolonged hyperthyroidism may produce hyperemia of the gingivae.

The characteristic pigmentation within the mouth is frequently the first sign of Addison's disease.

In the lengthy discussion of diagnosis and treatment of diseases of the respiratory tract and their complications little is said concerning sinus diseases. Tanchester and Sorrin in *J. D. Res.* 16:69, 1937, observed no increase in dental and periodontal diseases in tuberculosis patients and the incidence of Vincent's was not greater than in non-tuberculous individuals.

Acute infectious diseases such as scarlet fever, varicello, measles, smallpox, diphtheria, and German measles have definite oral manifestations with which the dentist should be familiar, and this is also true of various metallic poisons.

There is a short chapter on allergies. Deficiency diseases and vitamins are given due consideration. The material on vitamins is taken from the report of the Council on Pharmacy and Chemistry of the American Medical Association.

On the subject of Bell's palsy it is surprising that no mention is made of the possible etiologic significance of dental infections or retained teeth although cases are cited in which symptoms of glossopharyneal neuralgia disappeared following the extraction of an impacted third molar.

The book is well conceived and organized and most instructive.

—*J. Herman Head*

Periodontal Diseases — Diagnosis and Treatment. By Arthur H. Merritt, D. D. S., M. S., F. A. C. D., F. A. A. P., Second Edition, 205 pages. The Macmillan Company, New York City. 1939.

The importance of the periodontal structures is axiomatic and in recent years they have been studied intensively, and great progress has been made in the diagnosis and treatment of their diseases.

It would thus seem that the general neglect to recognize and treat periodontal pathology is not due to a scarcity of information on the subject, but rather to a failure to take advantage of available material. This is partly the result of indifference but also perhaps because the writings on the subject have been too complicated and confusing.

Dr. Merritt's book is based on the clinical experience of his twenty years of practice in the specialty of periodontia, an experience enriched and rationalized by a fine scientific background. It is an admirable summary of the entire field of periodontology presented in a very readable, assimilable form.

The principles and methods set forth have been tested and found workable, which is one reason the book makes such interesting reading. It rings true. There can be no doubt that the author knows whereof he speaks. It should indeed do much towards "pushing back the barriers of ignorance" . . . and "helping to a clearer understanding of the principles and practice of periodontia."

The second edition of *Periodontal Diseases —Diagnosis and Treatment* is virtually a new book, but the chapter on "Periodontal Abscess" and that on the "Use of Tobacco" are reproduced from the earlier work published in 1930; and here, let it be said, the author could hardly have improved upon the original.

The chapters dealing with fundamentals, the structure and physiology of the periodontal tissues, the nomenclature and the classification of their diseases, are admirably condensed and simplified; confusing details and controversial matters have been omitted.

Emphasis, throughout, is placed where it belongs, on the importance of securing and maintaining high resistance in the supporting structures. This principle is peculiarly applicable in so-called traumatic occlusion, where damage is more often the result of normal stresses on tissues of low resistance than the reaction of the normal periodontium to "abnormal" strain. Attention is called to the wide margin of safety between stress and resistance. The implications as to treatment are obvious.

A broad-minded consideration is given to the various kinds of treatment which have been used successfully for periodontoclasia, and while sub-gingival curettage is the method of choice in all but extreme cases, gum resection even of the extremely radical type advocated by Ward, is graphically described and illustrated, and recommended for certain cases.

Not the least valuable part of the book is the chapter on post-operative and home care, including prophylaxis. Some of us may

disagree with the author's brushing technic, but the method is acceptable if it produces the desired results in cleanliness, stimulation of local circulation and development of a highly keratinized epithelium.

Great conservatism is recommended in dealing with exposed bifurcations. Here one should be governed by the condition present and instead of condemning all such teeth to extraction, by the method suggested many may be retained in health and function over a long period.

The treatment of cervical sensitiveness incident to gingival recession is illustrative of the general practicability of the book.

The description and discussion of desquamative gingivitis with case reports is the best available on the subject. (Dr. Ziskin's recent work with gonadal hormone treatment is omitted doubtless because the treatment was too new to have been sufficiently tried out before the publication of Dr. Merritt's book.)

A strong case is made against the use of tobacco, based as it is on scientific reasoning. In regard to leukoplakia it is said that: "As a rule, the only treatment required is the discontinuance of tobacco and maintenance of good hygiene. Under these conditions, the white irritated patches usually disappear in the course of a year or two." Unfortunately, this reviewer has seldom found this to be true.

As has been indicated, Merritt's periodontal pathology is primarily intended for the general practitioner of dentistry and it is not too much to say that any dentist, no matter how meagre his previous knowledge of the subject, will find the book entirely comprehensible and an invaluable guide in his office practice.

The illustrations are adequate though not numerous and the references are conveniently placed at the close of the chapters; the general format is excellent.

—*Celia Rich*

Die Paradentose und ihre Heilung. Paradentosis and its cure. By H. Fuchs. Review in *Schw. Mschr. f. Zahn*, 9:961. 1938. (A publication by Emil Pahl.)

This small volume comes entirely under the heading of biological medicine; paradontosis is treated as a symptom of general disease of the body. As to the cause, a great number of things are mentioned: poor functioning of the endocrine glands, unsound mode of living, faulty action of the digestive organs, and deficiency of mineral elements and vitamins.

Fuchs' proposals can certainly help the populace, not only as concerns paradentosis, but in general. As to treatment, he recommends:

1. Psychic stimulation—change of air and surroundings.
2. Therapeutic steps, dry-brush massage, and baths.
3. Internal treatment through diet and drugs.
4. External treatment of organs of mastication.

The author does not recommend an unlimited amount of uncooked food; on the contrary, he advocates a mixed diet of cooked and fresh foods.

The book is written for patients and will serve to outline a sensible way of living.

—*M. B.*

The Toothbrush, Its Use and Abuse. A Treatise on Preventive Dentistry and periodontia as Related to Dental Hygiene. By Isador Hirschfeld, D. D. S., F. A. A. P., Associate Professor of Dentistry, Department of Periodontia, School of Dental and Oral Surgery, Columbia University; Attending Dental Surgeon, Presbyterian Hospital, Columbia University Medical Center; Consulting Periodontist, Beth Israel Hospital, New York; formerly chief, Periodontia Clinics, Midtown Hospital and Hospital for Joint Diseases, New York; formerly attending Periodontist, Bellevue and Allied Hospitals of Greater New York. With 174 case histories and 415 illustrations. Dental Items of Interest Publishing Co., Inc., Brooklyn, N. Y., 1939.

Review in *J. A. D. A.*, 26(7):1237. July, 1939.

Dr. Hirschfeld, in presenting a textbook on the toothbrush; its use and abuse, has written a treatise on preventive dentistry and periodontia as related to dental hygiene. His careful observation and long experience in practice, in teaching and in hospital associations, have given him an opportunity to obtain much material with which to illustrate his text in an interesting manner. Descriptions of a large number of pathologic conditions of the oral tissues gives the book great value. The importance of the use of the toothbrush is strongly emphasized as it

is made a part of the treatment for each condition, as well as an important factor in the prevention of these conditions. It is unique in that the use of the toothbrush is made such an important part of each chapter.

The text begins with an interesting history of the development of the toothbrush. The reader's interest is at once attracted, and, in the second chapter, it becomes fixed by the challenge that we are still groping about for agreement as to the etiology of dental caries and periodontal disease, as well as a practical procedure for the prevention of these diseases without the continual use of the toothbrush.

The use of the toothbrush for tissue stimulation in the treatment of many forms of gingivitis is discussed in the next six chapters. Five chapters are devoted to tissue trauma and tooth wear that may be caused or increased by improper use of the toothbrush. An extensive discussion of gingival tissue recession and erosion or wasting of the teeth is given and fully illustrated. Three chapters are devoted to methods of brushing the teeth advocated by different operators, and the proper type of brush for the most efficient use. Dentifrices and their various ingredients are discussed. The warning given against the too general use of sodium perborate dentifrices as a preventive of Vincent's infection is timely.

The excellent chapter on food impaction is a classic and adds greatly to the value of the text. The last chapter gives a review of the research on dental caries, and the brief summary includes dietary recommendations that are sound.

The text is well written and beautifully illustrated. There is an extensive bibliography and also a very complete index.

The book, the only one of its kind that has been written is a valuable contribution to dental literature. It should be in every dentist's library.

—*E. D. C.*
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BOOK NOTICE

An Experimental Investigation of Enamel, Dentin and Dental Pulp. E. Wilfred Fish, D. Sc. Lond., M. D., L. D. S., Manch.; Honorary Dental Surgeon and Lecturer, Royal Dental Hospital and School of Dental Surgery, London; Assistant Honorary Dental Surgeon, St. Mary's Hospital, Paddington; Honorary Assistant in Physiology, University College, London. 118 pages and 55 Original Illustrations of which eight are in color. London, John Bale, Sons and Danielson, Ltd., 1933.

Fish's volume deals entirely with the tissues within the tooth itself, but any dentist will be interested in this book by our distinguished English confrere, be he periodontist, surgeon or restorative specialist. The volume is a masterpiece of the publishers art and altogether can be recommended unreservedly as a valuable addition to one's dental library. —*C. R.*